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A 4-week institute to prepare vocational educators in leadership positions for a change agent role in vocational education curriculum development was held on the Oregon State University campus from June 19 to July 14, 1967. A broad-based approach to the curriculum process was used, implementing an organic curriculum concept and behavioral definition of objectives in a systems approach to curriculum development. Major objectives were to (1) develop greater understanding of curriculum theory and design, (2) increase familiarity with innovative programs and practices, and (3) develop proficiency in using techniques and strategies of a decision model of curriculum development. An enrollment of 30 participants was selected from 130 applications. The program included presentations by the resident faculty, visiting lecturers, assigned readings, field trips, reaction groups, questions and answer sessions, and discussion groups. A task force project developed a guide to vocational education curriculum development. The state director of vocational education and his professional staff participated in program planning, staffing, and operation. Post-institute evaluation indicated achievement of objectives. (DM)

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SUMMER INSTITUTE TO PREPARE VOCATIONAL EDUCATORS IN CURRICULUM DEVELOPMENT

July 1968

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Final Report

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SUMMER INSTITUTE TO PREPARE VOCATIONAL EDUCATORS IN CURRICULUM DEVELOPMENT

T. A. Ryan

Oregon State University
Corvallis, Oregon 97331

July 1968

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SUMMARY

This is a report of a four-week institute, held in the summer, 1967 to equip individuals in leadership positions with practical skills and theoretical knowledge requisite to effective implementation of change agent role in vocational education curriculum development. The program focused on a broad-based approach to curriculum process, implementing an organic curriculum concept, behavioral definition of objectives in a systems approach to curriculum development. Institute objectives implementing the purpose of the program were for participants to (1) gain greater understanding of curriculum theory and design; (2) become more familiar with innovative programs and educational practices relating to vocational education curriculum development; and (3) become skilled in using techniques and strategies to implement a decision-model of curriculum development.

Of 130 applications, thirty were selected to participate in the institute. The program included formal and informal activities designed to achieve the three primary institute objectives. Activities designed particularly to increase understanding included presentations by resident faculty at Oregon State University and visiting lecturers; reaction groups; discussion groups; and question and answer sessions. In addition assigned readings, field trips, and independent study were required. The main activity aimed at helping participants develop skill in using a decision-model of curriculum development was a task force project, with participants working in six task groups, to produce a guide to vocational education curriculum development.

Evaluation of the institute, made with paper and pencil test immediately following conclusion of the program, and a post-institute follow-up revealed that objectives of the program were achieved.

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    Welcome Rumbaugh (Oregon)
    Angelo J. Tedesco (Connecticut)
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I. Introduction

A. Problem

This is a report of a four-week institute, held in the summer, 1967 to equip individuals in leadership positions with practical skills and theoretical knowledge essential to effective implementation of change agent role in vocational education curriculum development. The institute plan was predicated on a basic assumption that there was need to develop in vocational education leaders sound understanding and skill proficiency in theory and design of curriculum. The institute program was designed to focus on a broad-based approach to curriculum process, implementing an organic curriculum concept (Morgan and Bushnell, 1966); behavioral definition of objectives (Mager, 1962); a systems-approach to curriculum development (Mager and Beach, 1967). Principles and techniques of action research were applied in the institute to train participants in use of a decision model of curriculum development.

B. Statement of Need

The need for making a concerted effort to broaden the approach to curriculum development and to prepare educators in leadership positions for effective implementation of change agent roles in education has been noted by recognized leaders in education and government. Conant (1964) observing that governments of highly industrialized countries were concerned about national waste of skills and talent deplored the loss of human resources when there was unprecedented need for world strength. Conant (1964) considered one of the major challenges facing educators the task of finding viable ways for education to develop potentialities of children and youth. This challenge to education was reiterated by President Johnson (1964), who noted that even though the nation was "prosperous, strong, and materially richer than any in history--largely because of the knowledge, skills, competence, and creativity of our people" the potential was not being reached and much of the nation's human capability was not being developed fully and not being used.

The key role of educational leaders in realizing potential resources of the nation has been emphasized repeatedly. Johnson (1964) pointed to the need for new and better training of the nation's educational leaders as essential to development of the human resources. The Panel of Consultants, appointed by the late President John F. Kennedy in 1961 to study structure and goals of vocational education and to formulate recommendations for improvement, concluded that the nation's system of vocational education was unbalanced and inadequate. The Vocational Education Act of 1963 implementing recommendations of the Panel of Consultants mandated strengthening, improving and expanding of vocational education by those in leadership positions. The need for improving vocational education through a broad-based approach implementing reliable, valid research data in future-oriented, innovative curricula, and the concomitant need for preparing vocational education leaders with knowledge and skills to design broad-based, individual-society-related curricula constituted major thrusts against which the 1967 summer institute in vocational education curriculum development was directed.

C. Rationale

At the outset it was assumed that the decision-making process implementing an action research model afforded a viable basis for conceptualizing curriculum development. Within this frame of reference, design of quality curriculum proposals was seen as constituting a priority change agent task, and effective curriculum decision-making was considered essential to development of quality curriculum proposals. The rationale undergirding development of the institute program for preparing leaders in design of broad-based, future-oriented vocational education curricula was defined by a set of assumptions. It was assumed that to be effective, curriculum proposals should be based on sufficient and valid information; organized around practical and theoretical considerations; and designed against continuing and systematic evaluation. A six-dimension curriculum development model constituted the theoretical base against which the institute program was conducted. The model implemented an organic curriculum concept (Bushnell and Morgan, 1966) in a spiral involving (1) behavioral definition of objectives; (2) probabilistic consideration of relevant, valid information; (3) generation of curriculum decisions; (4) testing of curriculum-decisions through trial implementation of curriculum proposals; (5) measurement of curriculum outcomes against stated objectives; and (6) curriculum evaluation and feedback to information and objectives dimensions, thereby generating recycling of the curriculum spiral.

Major dimensions of the curriculum model were implemented by sub-dimensions, including differential uses of primary and secondary source data; relation of task analysis and job analysis to determination of objectives and selection of curriculum content (Mager and Beach, 1967); use of systems approach in curriculum design; building of job-cluster curricula; designing of curricula for those with spiral needs; and vertical and horizontal articulation of curricula.

The four-week summer institute in vocational education curriculum development, held at Oregon State University in the summer, 1967, was designed primarily to provide background and training for participants in a model of curriculum development, providing a base for effective implementation of the change agent role. It was intended that participants would gain background in curriculum theory and design; would be trained in a broad-based approach to curriculum development; would develop a pool of information on new programs and innovative approaches; and would build an inventory of references and resources relevant to a decision-model of vocational education curriculum development.

D. Purposes and Objectives

The major aim of the institute was to equip vocational educators in leadership positions with practical skills and theoretical knowledge essential to effective implementation of the change agent role in curriculum development. Specific objectives of the institute program were:

1. for participants to acquire background knowledge in curriculum theory and design;

2. for participants to become familiar with advances and innovative practices and programs in curriculum development in vocational education;

3. for participants to become proficient in applying a decision model of curriculum development by developing skills in (a) defining objectives behaviorally; (b) identifying primary and secondary sources of information relevant to vocational education curriculum; (c) using techniques of job analysis, computerized follow-up, occupational clustering, and socio-economic-cultural analysis of information; (d) developing curriculum decisions predicated on an information base; (e) designing proposals to implement curriculum decisions; (f) measuring curriculum outcomes; and (g) evaluating total curriculum, curriculum components, and individuals.

II. Method

A. Design

It was intended that objectives of the program would be attained through a carefully contrived training program implementing an action research model. Three factors considered essential to attainment of institute goals were control in participant selection; quality and quantity of information presented; provision for participation in curriculum development activities.

The program was planned to exercise control over selection of participants in the program to obtain as homogeneous a group of vocational education leaders as possible. Amount and kind of information presented to participants were taken into consideration in developing a basic list of required readings, list of supplementary references, selection of consultants, and planning of field trips and demonstrations. A major component of the program was a task force assignment to develop a guide for vocational education curriculum development.

The institute was four-weeks in length, from June 19 to July 14, 1967. Regular sessions were held daily Monday through Friday from 9:00 A. M. to 4:00 P. M. Task force assignments and field trips were implemented during evening hours and weekends.

B. Participants

A total of 130 applications for the institute program was received, including applications from 47 nominees and 83 non-nominees. Of the total number of applicants, thirty were accepted for participation in the institute. All applications were evaluated and rated in terms of selection criteria:

a. Extent to which applicant's position would permit him to assume leadership for vocational education curriculum development;

b. Extent to which applicant was involved with vocational education curriculum development in high schools, post high schools, municipal or state departments, or universities.

c. Extent to which applicant was committed to try out methods, materials, and techniques of curriculum development.

d. Extent to which applicant had professional objectives and background of leader, innovator or change agent.

Method of Selection

Letters were sent to State Director of Vocational Education, Deans of Schools of Education, and Directors of Research Coordinating Units in the fifty states requesting them to nominate candidates for the institute. Program descriptions and selection criteria were sent to nominators to serve as guidelines in nominating candidates and to increase probability of having a relatively homogenous applicant group from which candidates would be drawn. Nominees were invited to make application for the institute. Nominees and non-nominees were requested to submit application form, two letters of reference, evidence of employment or contract for employment for 1967-68 in a position involving responsibility for curriculum development. In selecting individuals for attendance at the institute, there was no discrimination on account of sex, race, color, or national origin of an applicant. An effort was made to insure equitable representation from the nine U. S. Office of Education regions. Appendix A reports the number of applications received, accepted, and rejected by geographic region and nomination status. The roster of institute participants is given in Appendix B, and vitae for participants is included as Appendix C.

C. Institute Staff

The staffing pattern of the four-week institute in vocational education curriculum development was designed to provide a vehicle for implementing administrative, training, and evaluation functions. Professional and support personnel were assigned to each functional category. Personnel included director, one FTE professional position, two professional support positions (.50 FTE), and one supporting secretarial position in addition to part time resident faculty and visiting lecturers.

Responsibility for project administration and evaluation was implemented by director. Identifying the training functions and defining staff selection criteria constituted bases for staffing the training phase of the program. On basis of considering program objectives it was decided that training functions to be accomplished by staff included dissemination of information to implement the curriculum model; integration of information into a curriculum model; and utilization of information in a curriculum design. It was assumed that effective accomplishment of these training functions required selection of professional personnel who would be perceived by participants as credible, having expertise in a given dimension relevant to the curriculum model; and who would be sufficiently homofluous with participants to insure effective communication between staff and participants. Considering these assumptions together with the multi-dimensional nature of information base to be developed during the program pointed to desirability of an interdisciplinary staff, bringing expertise in vocational-technical education and the social and behavioral sciences.

Professional staff selected to implement the information dissemination function included Oregon State University resident vocational education faculty and visiting lecturers with expertise relevant to the dimensions of a decision-curriculum model and/or experience with research or innovative programs or educational practices demonstrating aspects of a broad-based, organic curriculum concept. Institute staff is given in Appendix D.

D. Training Program

The training program designed to achieve institute objectives was four weeks in length, starting June 19, 1967 and ending July 14, 1967. Three weeks prior to opening of the institute, a packet was mailed to each participant, containing syllabus, bibliography of required readings, advance reading materials, travel information, Oregon tourist information, and participant roster. The syllabus contained four sections:

Section I. Nature of the institute
  A. Description
  B. Participants
  C. Objectives
  D. Institute activities

Section II. Topical outline
  A. Defining a model of curriculum development
    1. Philosophical base
    2. Organic curriculum concept
    3. Decision-model of curriculum development
  B. Defining objectives
    1. Aims, purposes, objectives
    2. Definition of behavioral objectives; cognitive, affective, psychomotor
  C. Considering information dimension of curriculum development
    1. Kinds of information needed
    2. Sources of information
    3. Techniques for gathering information

D. Making information-based curriculum decisions
    1. Kinds of decisions
    2. Implementing decisions in curriculum plans
E. Curriculum evaluation
    1. Measurement
    2. Evaluation

Section III. Requirements
    A. Participation
    B. Work on task force project; Guide to Curriculum Development
    C. Assigned readings
    D. Serving as discussion leader

Section IV. Evaluation

The institute program was demanding and intensive, with formal training activities Monday through Friday, from 9:00 A. M. to 4:00 P. M. and outside reading, independent study, field trips, and task force activities required during evening hours and weekends. The program aimed to maximize opportunities for participants to engage in informal discussion and social interaction. The daily schedule of activities is reported in Appendix E. The program included activities to achieve the three primary objectives of the institute.

1. *Formal and informal activities were designed to achieve Objective 1, acquisition of background knowledge in curriculum theory and design*. Formal activities included structured seminar sessions and assigned readings. Informal activities included unassigned readings and nonstructured group interaction. Daily seminar sessions with lectures, discussions, question-answer sessions, reaction groups, and participant reports provided foundation in theory and design of curriculum. A theoretical frame of reference for a broad-based organic curriculum was defined. Intensive treatment was given to each of six dimensions of the curriculum model; (a) defining objectives; (b) identifying, selecting and using information on occupational opportunities, human resources and educational resources; (c) making information-based curriculum decisions; (d) implementing decisions in curriculum proposals; (e) measuring curriculum outcomes at student, teacher, employer levels; and (f) evaluating curriculum. In the formal seminar sessions presentations and guided discussion focused on relevance of employment, student and sociological data to curriculum planning, and considered techniques of job analysis, task analysis, occupational clustering and economic survey in curriculum design. Lectures and

discussions were given on programs for disadvantaged, materials-media-methods mix, vocational course development, organization of learning, staffing and budgeting, follow-up techniques; evaluation strategies; and systems approach. Lectures given during the institute are listed in Appendix F. Texts of presentations made by resident staff and visiting lecturers during formal sessions are given in Appendix G.

Assigned readings were required of all participants, to provide a common information base relating to the curriculum concept promulgated by the institute program. Required readings are listed in Appendix H-1.

Informal activities designed to achieve Objective 1, acquisition of background knowledge in curriculum theory and design, included unstructured activities in which participants were afforded opportunity to interact informally with each other and professional staff and free reading of related information.

In addition to designed readings (Appendix H-1), a file of supplementary references was made available for participant use (Appendix H-1 to H-8). It was assumed that having access to these materials would serve to increase participants' background knowledge and would assist in familiarizing them with informational sources. Participants were requested to submit summaries of unassigned free readings. A list of unassigned readings which were duplicated and distributed among participants is given in Appendix H-8 to H-11.

2. Formal and informal activities were designed to achieve Objective 2, increasing familiarity with advances and innovative practices and programs in curriculum development. Formal activities included lectures, field trips, and participant reports of innovative practices in their respective states. Informal activities included buzz sessions and unscheduled field experiences.

Formal presentations were given during the institute program, describing, demonstrating, and illustrating components of innovation in vocational education (Appendix F). Field trips to Tongue Point Job Corps Center, Astoria, and Benson Polytechnic High School, Portland, Oregon were included to provide opportunity for examining effects of varied aspects of learning environments. As part of the formal program, participants were required to report on vocational education in their respective states. It was assumed that since participants came from leadership positions in vocational education they were well-equipped to share experience-based information relative to curriculum innovation, particularly programs and practices which had not had widespread publication. Participants described innovative programs in Hawaii, Kansas, California, North Carolina, Washington, Massachusetts, Idaho, District of Columbia, Wyoming, Oregon, Oklahoma, Michigan, Alaska, Texas, Wisconsin, Arizona, Illinois, Connecticut, Nevada, Kentucky and Utah. Programs described by participants are listed in Appendix I.

Informal activities to promote wider understanding of advances and innovations in vocational education included buzz sessions, unstructured social interaction among participants, and unscheduled field experiences.

3. Formal and informal activities were designed to achieve Objective 3, development of proficiency in using a decision-model to design vocational education curriculum. Formal and informal activities were related to a task force project in which participants worked in six task groups to design a guide to vocational education curriculum development. Formal activities took place in task group meetings during regular sessions. Informal activities included post-hour meetings of task groups and interaction among participants. Task groups were assigned to develop dimensions of the curriculum model. Task force leaders implemented directing, coordinating, integrating roles to insure compatibility among concepts developed by various task groups and cohesion within combined sections of the guide. Copies of the guide developed as a result of the task force activities were made available to participants for test-use during the post-institute year. The guide outline is shown in Appendix J-1 to J-2. Task force assignments of participants is reported in Appendix J-3.

Informal activities relating to development of the task force project included evening sessions of task groups, and unstructured meetings of task group leaders. A major part of the work which went into development of the guide was accomplished in evening and weekend hours. Most of the participants had lodging in a university residence which was reserved for institute participants; a considerable amount of task force activity relating to development of the guide took place in this informal residence setting. A great interchange among members of different task groups occurred in the informal setting.

III. Results

A. Description of Institutional Setting

This four-week summer institute in vocational education curriculum development was held on the Oregon State University campus, situated in Corvallis, Oregon in the heart of the Willamette Valley. The university is a land-grant institution offering graduate and undergraduate programs in vocational education. The institute was held during the regular summer session, at which time programs were being offered by departments of agricultural education, business education, industrial education, and home economics education. The setting provided access to one of the largest computer centers of the west coast, and extensive facilities of the William Jasper Kerr library, both of which are located at Oregon State University. One of the assistant coordinators, recommended for the position by Dr. Henry A. Ten Pas, Chairman, Division of Vocational Education, Adult Education and Community Colleges, Oregon State University, was an intern in the Oregon vocational education intern leadership development program. Arrangements were made to provide housing for all participants in a single university residence, located on campus near the Memorial Union in which daily institute sessions were conducted.

B. Participants

Participants ranged in age from 27 to 50 years. There were twenty-nine male and one female members (Appendix K-1), representing public secondary schools, area vocational centers, community colleges and technical institutes, institutions of higher education, and state departments of education (Appendix K-1). Education and experience backgrounds of participants are described in Appendix C, Vitae of Participants.

C. Results of Evaluation

Two levels of evaluation of this institute program were made, immediate criterion measures taken at the institute conclusion and follow-up implemented during the post-institute year. A paper-and-pencil test was administered to assess extent to which participants had achieved Objectives 1 and 2, acquiring knowledge of curriculum design; and gaining familiarity with innovative vocational education programs and educational practices. Follow-up provided some measure of the extent to which participants achieved Objective 3, developing skill in applying principles of curriculum development implementing the training program. The primary purpose of the training program was to equip selected leaders in vocational education with skills and knowledge essential for effective implementation of change agent role in vocational education curriculum development. Ultimate outcome expected to follow from the institute was improvement of vocational education.

1. Acquiring knowledge of curriculum design and theory. The paper-and-pencil test given at the end of the institute program included items designed to elicit responses indicating extent to which participants had acquired new knowledge or reorganized knowledge of curriculum design. Test items 1 and 2 were designed to elicit self-evaluation responses from participants to indicate extent to which they felt they had gained new knowledge or reorganized knowledge about curriculum design and theory in relation to vocational education. In both instances twenty-six out of thirty respondents indicated having marked increases in understanding of curriculum design. Summaries of responses to Items 1 and 2 are given in Appendix L-1. Item 4 was an open-ended question in which respondents were asked to outline significant new or reorganized knowledge about vocational education curriculum design and theory acquired or developed during the institute. Analysis of responses to this item indicate that forty-two information areas were identified by respondents as areas of new or reorganized knowledge developed during the institute. The area most frequently listed (18 out of 30 respondents), was "designing curriculum using behavioral objectives with a research model." The second most frequently listed area of knowledge development (13 out of 30 respondents) "using a systems approach to curriculum design," related to the use of the research model in curriculum design. The complete list of knowledge areas with frequencies of reporting is given in Appendix L-2 and L-4.

2. Increasing knowledge of innovative and exemplary practices and programs in vocational education. One item was included to elicit self-evaluation responses from participants indicating extent to which they felt they had learned about vocational education programs and educational practices with which they had been unfamiliar or only slightly familiar before the institute. Of thirty responses to the question, four indicated learning very little; twenty reported learning a great deal; and six reported learning a very great deal. Item 7 called for listing programs and educational practices about which additional information was gained during the institute, and identifying sources of the information. Analysis of responses to this item revealed fourteen programs were identified, with eighteen sources of

information (Appendix M-1); and a total of thirty-one educational practices identified, with thirty-one sources of information (Appendix M-2, M-3). Information sources included institute participants, resident staff, visiting lecturers and authors of required and supplementary readings.

3. Developing proficiency in using a research model of vocational education curriculum development. One item (8) was included in the posttest to elicit self-evaluation responses from participants indicating extent to which they felt they had developed proficiency in using a research model of vocational education curriculum design and planning. Of thirty respondents, three reported developing proficiency only slightly; nineteen, at a significant level; and eight at a very significant level.

Test items 11 and 12 required respondents to identify persons and groups whose support would be needed for successful implementation of the curriculum model, and to outline an action plan for putting into practice knowledge acquired and skills developed during the institute. Twenty-eight out of thirty respondents outlined viable plans and indicated key sources of support for implementing broad-based curriculum development utilizing principles and concepts developed during the institute. Responses to this item were rated on a six point scale (0-5), in terms of soundness of plan and relation to decision-curriculum model defined in the institute. Distribution of ratings of responses to this item is as follows:

Rating	Description	Frequency
5	Superior plan, including great depth and breadth of detail; logical organization	3
4	Above average plan, lacking somewhat in detail; logical organization	16
3	Highly satisfactory plan, details not elaborated	9
2	Satisfactory plan. Details lacking. Some inadequacies in organization	0
1	Inferior plan. Lacking in logical organization	0
0	No description	2

Six randomly selected responses were rated independently by two judges as a basis for determining reliability of ratings ($r = .91$).

In identifying sources of support considered essential to implementation of curriculum development and change, respondents listed state, local school, university, and community support sources (Appendix N).

Participant Follow-Up

A follow-up of participants was conducted to gather information relating to participants' implementation of the change agent role in vocational education curriculum development. Follow-up provided the major source of information relating to attainment of Objective 3, participants' use of research model of vocational education curriculum development. Information was gathered from participants from August 1, 1967 to May 31, 1968 relating to their curriculum activities. Reports were analyzed to determine nature of activities, revealing that participants engaged in three areas of activity relating to implementation of institute concepts: dissemination, training, and development. Information gathered from participants during the follow-up period was summarized and categorized; summary reports were sent to participants for verification, correction, deletion, and additions. Verified summary reports were returned by twenty-five participants. Information from the thirty summary reports, including 25 verified returns and 5 non-verified returns was utilized in assessing extent of implementation of institute concepts.

A review of participant follow-up reports of curriculum activities indicates that twenty-six out of thirty engaged in dissemination activities, twenty-five in curriculum development; and seventeen in training. An indication of the extent to which participants engaged in varied activities is given by the following summary:

16 reported engaging in dissemination, training and development
9 reported engaging in only two of the activity areas
2 reported engaging in only one of the activity areas
3 reported no curriculum activity related to the institute

Complete activity reports for all participants are included in Appendix O. Review of the reports gives an indication of extent and level of sophistication of participant activity in each area. Sample report form is included in Appendix O.

4. Participant attitudes to institute concepts. The fostering of attitudes favorable to concepts developed during the institute was not a defined objective of the training program. However, it was assumed that implementation of change agent role related not only to extent of background knowledge and understanding and proficiency in using techniques and strategies, but also to feelings of individuals about components of vocational education curriculum development. Therefore, to ascertain degree to which findings relating to participant acquisition of knowledge and development of skill in using a decision model of curriculum design might be qualified by competing attitudinal responses, an inventory of participant reactions to institute concepts was made.

Thirty-six basic concepts developed during the institute were listed and participants were asked to indicate their feelings concerning value and pleasantness of the concept. To determine intensity of feeling, ratings were made on a seven-point scale, ranging from extremely pleasant and valuable to extremely unpleasant and worthless. Analysis of results indicates that responses tended to be either skewed in favor of pleasantness and value, or spread over the intensity dimension. The following concepts were found to elicit responses indicating reactions of unpleasantness and worthlessness as well as feelings of pleasantness and value: job corps curriculum; measurement; pretechnology program. Responses to these items were quantified by scoring on a seven-point scale, ranging from -3 for most unpleasant, most worthless to +3 for most pleasant, most valuable. The listing of concepts in descending order of mean rating is given in Appendix P. Inspection of this list reveals that the concepts of curriculum hypothesis and research model of curriculum development were considered most pleasant and valuable by participants. In an effort to determine extent to which concepts, principles and ideas presented through readings and resource personnel were accepted, participants were asked to indicate extent of agreement with twenty-one basic ideas presented during the institute. Analysis of results indicates that there was strong agreement with assumptions that the teacher is an integral part of the curriculum; and objectives serve to guide and direct curriculum development. The list of assumptions and extent of participant agreement is given in Appendix P-3 and P-4.

5. Evaluation of institute organization and operation. An attempt was made to get some indication of the extent to which various components of the program contributed to effectiveness of the institute. Data were gathered relating to resource personnel and materials, program organization, and pre-institute planning.

Participants were asked to rate each of the resource persons on two dimensions, content mastery and communication skill. Ratings, made on a five point scale, from 1 = poor to 5 = outstanding, were summed and means computed for the two dimensions for each resource person. These data are reported in Appendix Q-1.

To give an indication of the value of resource materials, participants were asked to rate each of the required readings, using a 4-point scale, 0 = no value; 1 = little value; 2 = much value; and 3 = great value. Only one document was of questionable value. Ratings of resource materials are given in Appendix Q-2.

Program organization and pre-institute planning were evaluated by asking participants to rate items relating to these aspects of the training program. The participant responses reported in Appendix Q-3 to Q-4 indicate general satisfaction on the part of participants with most of pre-program activities and actual program operation.

IV. Conclusions

The primary purpose of this institute in vocational education curriculum development was to equip individuals in leadership positions with practical skills and theoretical knowledge essential to effective implementation of change agent role in vocational education. Principles and techniques of action research were applied during the institute to train participants in use of a decision model of curriculum development. It was intended that participants would gain new knowledge or reorganize knowledge of curriculum design and theory; increase familiarity with innovative programs and educational practices relating to vocational education curriculum development; and develop proficiency in using the decision model implementing a systems approach to vocational education curriculum development. The basic aim undergirding three primary objectives was to achieve improved vocational education through activities of participants in local schools, technical institutes and community colleges, universities, and state departments of education.

Results from the post-institute criterion test administered immediately following conclusion of the program give indication that participants did acquire new knowledge and reorganize knowledge of curriculum design; they increased familiarity with innovative programs and educational practices; and they were able to verbalize plans for using a research- or decision-model, systems approach to vocational education curriculum development. Results from the follow-up of participants during the post-institute period August 1, 1967 to May 31, 1968 revealed that over two-thirds of the participants engaged in dissemination, training, and development activities relating to implementation of change agent role in vocational education curriculum development. Two factors appear to be of importance in drawing conclusions concerning effects deriving from the institute program.

First, there appears to be some disparity between cognitive and affective outcomes from the institute. It can be seen by inspecting Appendices L and P, reporting extent to which participants increased or reorganized knowledge, and participants reactions to ideas and concepts developed in the program, that in many instances participants apparently gained knowledge about a program or educational practice and at the same time reacted negatively to it. For example, although the concept of clustering was one of those most frequently listed under acquisition of new knowledge, participant reaction to cluster curriculum concept was rated only 1.76 and knowledge cluster concept, 1.70, on a 3 point rating scale, with ratings ranging from .70 to 2.60. Both ratings were below the median. In this institute primary training objectives did not include fostering of favorable attitudes to concepts or strategies. It is suggested that in future training programs, a concerted effort be made toward fostering of attitudes as well as developing increased knowledge and improving skills.

Second, consideration of post-institute activities should take into account not only the number of activities in which participants engaged, but the depth and breadth of activities relating to each specific activity. For example, although one participant indicated engaging in only two activities, one of these was a major undertaking which eventuated in developing a five year statewide educational plan incorporating the totality of institute concepts. Thus, one activity of long-term, major dimensions can be expected to make as great an impact, resulting in improvement of vocational education, as a great many activities of lesser dimensions. In either instance, the purpose of the institute is being realized through differing approaches to implementation of change agent role.

APPENDICES

APPENDIX A

Institute Applications Received, Accepted and Rejected by Applicant Nomination Status and U. S. Office of Education Region of Residence

Number of Applications	Nominee Status of Applicant	U. S. O. E. Region of Applicant Residence									
		1	2	3	4	5	6	7	8	9	Total
Received	Nominee	3	2	3	0	10	4	4	4	17	47
	Non Nominee	2	8	4	8	16	8	10	7	20	83
	Total	5	10	7	8	26	12	14	11	37	130
Accepted	Nominee	1	0	1	0	2	1	2	3	10	20
	Non Nominee	1	0	2	1	1	0	0	1	4	10
	Total	2	0	3	1	3	1	2	4	14	30
Alternate	Nominee	1	0	0	0	1	0	0	0	0	2
	Non Nominee	0	0	1	0	0	1	1	0	0	3
	Total	1	0	1	0	1	1	1	0	0	5
Rejected*	Nominee	1	2	2	0	8	3	2	1	7	26*
	Non nominee	1	8	1	7	14	7	9	6	16	69*
	Total	2	10	3	7	22	10	11	7	23	95*

*Totals for rejections include incomplete and withdrawn applications.

APPENDIX B

Roster of Institute Participants

Roster of Institute Participants

Aaron Ahn
Teacher, Industrial Arts
Wallace Rider Farrington High School
Honolulu, Hawaii 96817

James Albracht
Assistant Professor
Kansas State University
Manhattan, Kansas 66502

Bill Allgood
Teacher-Coordinator, Work Experience Program
Abraham Lincoln High School
San Jose, California 95114

Wade M. Anderson
Head, Industrial Arts Department
Gonzales Union High School
Gonzales, California 93926

Jack Ballard
President,
Nash Technical Institute
Rocky Mount, North Carolina 27801

Henry A. Bauer
Director, Vocational and Occupational Education
Wenatchee Valley College
Wenatchee, Washington 98801

Orville H. Buesing
Teacher-Coordinator, Work Experience Education
San Jose Unified School District
San Jose, California 95124

Anthony V. Cipriano
Senior Supervisor in Education
State Department of Education
Boston, Massachusetts 02111

Virginia Clapp
Consultant, Vocational Education
Grossmont Union High School District
Grossmont, California 92030

William E. Daniels
Supervisor, Distributive and Adult Education
Moscow Senior High School
Moscow, Idaho 83843

Conard P. Edwards
Assistant Principal
Armstrong Adult Education Center
Washington, D. C. 20001

Alfred H. Flanigin
Teacher-Coordinator, Distributive Education
School District #7
Sheridan, Wyoming 82801

Herbert P. Halberg
Administrative Assistant
Honolulu Community College
Honolulu, Hawaii 96817

Henry B. Kalani
Chairman, Hotel and Restaurant Division
Kapiolani Community College
Honolulu, Hawaii 96814

James V. Lacy, Jr.
Vocational Consultant
OCCI Mid Columbia Education Center
The Dalles, Oregon 97058

Joe W. Lemley
Principal
Tulsa Area Vocational Technical Education Center
Tulsa, Oklahoma 74145

Maynard W. Mathers
Coop-Coordinator
Waterford Township School
Pontiac, Michigan 48054

Robert Miller
Supervisor Industrial Education
State Division of Vocational Education
Juneau, Alaska 99801

Robert L. Nichols
Consultant, Occupational Research
State Education Agency
Austin, Texas 78757

Russell Paulsen
Coordinator, Continuing Education and
Research
Marathon County Technical Institute
Wausau, Wisconsin 54401

John L. Peterson
Assistant Principal
Area Vocational Center
Phoenix Union High School
Phoenix, Arizona 85004

Bill G. Powers
Research Associate
Oklahoma State University
Stillwater, Oklahoma 74074

William E. Reynolds
Director, Mid Valley Area Vocational Center
Maple Park, Illinois 60151

Welcome Rumbaugh
Vocational Technical Supervisor
Lane County Intermediate Education District
Eugene, Oregon 97401

Thomas J. Straka
Director, Vocational Education
Kent Public Schools
Kent, Washington 98301

Angelo J. Tedesco
Associate Consultant Program Development
State Department of Education
Hartford, Connecticut 06115

Harvey G. Thiel
Area Administrator
State Division of Vocational Technical and
Adult Education
Las Vegas, Nevada 89101

Billy J. Vice
Specialist, Instructional Materials
Instructional Materials Laboratory
University of Kentucky
Lexington, Kentucky 40506

Dewain C. Washburn
Director, Sevier Valley Tech
Richfield, Utah

Clifford Zenor
Supervisor of Curriculum
State Board of Vocational Technical and Adult
Education
Madison, Wisconsin 53702

APPENDIX C

Vitae for Institute Participants

C-1

Sample Report of Participant Post Institute Activities

IV. Vita for

A. Educational Background

Institution	Years	Degree	Major	Minor

B. Professional Background

Position	Location	From To	Years Experience

C. Professional Affiliations

Organization	Year joined	Years Membership

D. Publications (authored by participant)

E. Credentials

Title	State	Year granted	Length of time valid

F. Nominated for Institute by

1.		2.	
	Name		Name
	Title		Title
	Affiliation		Affiliation

I herewith agree that the information contained herein is true and accurate and has my approval to be submitted for printing in the final report of the Curriculum Development Institute which was held on the campus of Oregon State University, Corvallis, Oregon, June 19 to July 14, 1967. I understand the final report will be submitted to the U. S. Office of Education and will be included in the ERIC system.

Signature

Date

Aaron Ahn

A. Educational Background

Oswego State Teachers College	1950-1956	B. S.	Ind. Educ.	Sci.
University of Hawaii	1956-1957			

B. Professional Background

Teacher, Metal Shop, Electronics	Farrington High School, Honolulu	1957-68	10
Instructor, Industrial Arts, Electronics	University of Hawaii	1963-66	part-time

C. Professional Affiliations

American Vocational Association

D. Publications -- None reported to date

E. Credentials

Industrial Education Certificate

F. Nominated for Institute by

Albert J. Feirer,
Director, Vocational, Post-High and Adult Education Branch
State Department of Education

James Albracht

A. Educational Background

University of Nebraska	1941-1948	B. Sc.	Agric. Educ.	Agronomy
University of Nebraska	1949-1954	M. Sc.	Voc. Educ.	
Michigan State University	1963-1966	Ph. D.	Agric. Educ.	Adult Educ. Soc.

B. Professional Background

Instructor, Vocational Education	Hebron High School, Hebron, Nebraska	1948-62	14 yr.
Director, Nebraska Wheat Development	State Department of Agriculture	1962-63	1 yr.
Student Teacher Coordinator	Michigan State Univ.	1963-66	3 yr.
Agricultural Teacher Educator	Kansas State Univ.	1966-68	2 yr.

C. Professional Affiliations

American Vocational Association	1948	20 years
National Education Association	1948	15 years

D. Publications -- Ten Publications

E. Credentials

Life Certificate-Vocational Agriculture, Secondary Schools	Nebraska	1948	Life

F. Nominated by

R. J. Agan
Head, Teacher Education
Kansas State University

Bill Allgood

A. Educational Background

San Jose City College	1960-1962	A. A.	Soc. Sci.
San Jose State College	1962-1964	B. A.	Ind. Arts
University of California	1965	6 sem hrs	
San Jose State	1966-1968	M. A.	Ind. Studies

B. Professional Background

Teacher-Coordinator, Work Experience Program	Abraham Lincoln High School, San Jose, Calif.	1964-68	4 years

C. Professional Affiliations

National Education Association	1964	4 years
American Vocational Association	1964	4 years
California Teachers Association	1964	4 years
S. C. T. A.	1964	4 years

D. Publications -- None reported to date

E. Credentials

Special Secondary Industrial Arts
Standard Designated Vocational, Diversified Occupation Certificate

F. Nominated for Institute by -- none

Wade M. Anderson

A. Educational Background

University of Texas	1939-1941			
Oregon State University	1949-1952	B. S.	Ind. Arts.	Soc. Stu.
Oregon State University	1952-1953	M. S.	Ind. Educ.	Educ.
University of Pacific	1961		Philosophy	

B. Professional Background

Teacher, Industrial Arts	Freedom Elementary School	1953-1956	3 years
Head, Industrial Arts Dept.	Gonzales Union High School, Gonzales, Calif.	1956-1968	12 years

C. Professional Affiliations

American Vocational Association	1967	1 year
California Industrial Arts Education Association	1953	15 years
National Education Association	1966	2 years

D. Publications -- American Industrial Arts Association, 1966

E. Credentials

Special Secondary Industrial Arts	Calif.	1953	Life
Life Diploma	Calif.	1967	Life
8.1 Vocational Education Credential	Calif.		

F. Nominated for Institute by -- none

Jack Ballard

A. Educational Background

Lenoir Rhyne College	1953-1956	A. B.	Soc.	Sec. Ed.
North Carolina State College	1961-1964	133 sem.	T&I Educ.	
University of North Carolina	1964-1966	M. Ed.	Ed. Ad.	Sociology
North Carolina State Univ.	1966-	doctoral candidate		

B. Professional Background

Teacher, woodshop, history	Granite Falls School Granite Falls, North Carolina	1956-61	5 yr.
Teacher, automechanics	Lee County Industrial Education Center, Sanford, North Carolina	1961-63	2
Teacher & Director, Extension and Evening Programs	Davidson County Community College, Lexington, North Carolina	1963-67	4
President	Nash Technical Institute Rocky Mount, No. Carolina	1967-	1

C. Professional Affiliations

American Vocational Association	1961	7 years

D. Publications --

E. Credentials

Principals Certificate, Graduate level Social Studies	North Carolina
Class A Vocational Certificate (formal education and 8 years experience)	North Carolina

F. Nominated for Institute by -- none

Henry A. Bauer

A. Educational Background

Colorado State College	1955-58	B. A.	Bus.	Speech
Colorado State College	1959-64	M. A.	Bus.	
Central Washington State College	1965		sem hrs.	

B. Professional Background

Distributive Education Coordinator	Valley High School Albuquerque, New Mexico	1959-64	5 yrs.
Teacher-coordinator, Mid Management	Big Bend College Moses Lake, Wash.	1964-65	1
Director, Adult Education	Wenatchee Valley College Wenatchee, Washington	1965-67	2
Director, Vocational and Occupational Education	Wenatchee Valley College Wenatchee, Washington	1967-	1

C. Professional Affiliations

American Vocational Association

D. Publications -- None reported

E. Credentials

Community College Certificate	Wash	1965	5 years
Washington Vocational Certificate	Wash	1965	5
Colorado Life Certificate	Colorado	1955	Life

F. Nominated for Institute by none

Orville Buesing

A. Educational Background

San Jose City College	1959-1961	A. A.	Gen.	
San Jose State College	1961-1964	B. A.	Elem. Educ.	Science
University of California	1964-1965	sem. hr.	Dis. Educ.	Voc. Educ.
San Jose State College	1966-1967	M. A.	Ind. Studies	
Tuskegee Institute	1967 summer		Voc. Ed.	

B. Professional Background

Coordinator, Work Experience Education	San Jose Unified School District San Jose, Calif.	1963-68	5 years

C. Professional Affiliations

National Education Association	1963	5 years
American Vocational Association	1963	5
California Teachers Association	1963	5
California Industrial Educ. Assoc.	1963	5

D. Publications

Program Instructor for Service Station Operation
Behavioral Objectives for Pre-vocational Mathematics

E. Credentials

General Elementary-Elementary Education Grades K-8
Special Secondary-Safety and Driver Educ.
Senior High and Jr. College
Standard Designated Subjects, Dis. Educ. and Work
Experience Senior-High and Jr. Col.

F. Nominated for Institute by none

Anthony V. Cipriano

A. Educational Background

State College at Fitchburg	1945-48	B. S. E.	Ind. Educ.	Math
Boston University	1950	Ed. M.	Adm/Sup.	
Tufts College	1961	sem. hrs.	Adm/Sup	
Northeastern University	1962		Adm/Sup	
Boston University	1963	C. A. G. S.	Adm/Sup	

B. Professional Background

Teacher, Related math and science	1949-63	14 years
Senior Supervisor in Education, State Department of Education, Boston, Mass.	1963-68	5 years

C. Professional Affiliations

American Vocational Association
Phi Delta Kappa
Epsilon Pi Tau
Guidance Association

D. Publications -- none reported to date

E. Credentials

Approved Teacher for Statewide Schools, Secondary and Guidance Certificate

F. Nominated for Institute by none

Virginia Clapp

A. Educational Background

Stanford University	1924-1927			
University of Oklahoma	1942-1943			
San Diego State College	1959			
Stanford University	1959-1960	B.A.	Art	Econ

B. Professional Background

Coordinator, Distributive Education and Work Experience Ed.	Grossmont Union High School	1958-68	10 years

C. Professional Affiliations

American Vocational Association	1960-1968	7 years
CBEA, CADE, CIEA, CAWEE, CASCD	1960-1968	8

D. Publications -- none reported to date

E. Credentials

Special Secondary Life Diploma in Vocational Business Education Certificate	Calif.	1960	Life

F. Nominated for Institute by

Wesley P. Smith State Director of Vocational Education	Everett Edington Coordinator Research Coordinating Unit California

William E. Daniels

A. Educational Background

University of Idaho	1957-1963	B.S.	Bus.	Econ.
University of Idaho	1963-1966	M.Ed.	Bus. Ed.	

B. Professional Background

Supervisor, Distributive and Adult Education	Moscow School Dist. Moscow, Idaho	1965-1967	2 years

C. Professional Affiliations

American Vocational Association

D. Publications -- none reported to date

E. Credentials

Standard Secondary Distributive Education,
Business Education

F. Nominated for Institute by

Everett Samuelson Dean, College of Education University of Idaho	Kenneth Loudermilk Director, Idaho Research Coordinating Unit

Conard P. Edwards

A. Educational Background

Miner Teachers College	1940-46	B. S.	Math.	Science
New York University	1949-50	M. A.	Admin.	Supervision
Catholic University	1948		Physics	
University of Maryland	1962		Math	

B. Professional Background

Teacher, Mathematics		D. C. Public Schools	1948-66	19 years
Asst Principal		Armstrong Adult Education Center	1966-68	2
Teacher --Math	part-time	Roosevelt Even. H. S.	1958-64	
Teacher--Math	part-time	D. C. T. College	1961-62	
Teacher--Math	part time	Howard University	1966	
Teacher--Math	part-time	D. C. T. College (field centers) Ed. Television Series	1964	
Asst. Principal	part-time	Roosevelt Evening H. S.	1965-66	

C. Professional Affiliations

American Vocational Association	1966	2 years
National Council Teachers of Math	1962	7 years

D. Publications -- none reported to date.

E. Credentials

Mathematics Junior High School Certificate	D. C.	1947
Mathematics Senior High School Certificate	D. C.	1958

F. Nominated for Institute by none

Alfred H. Flanigin

A. Educational Background

Northern Wyoming Comm. Col.	1949-50		L. A.	
Oklahoma City University	1950-53		Bus.	
Oklahoma University	1953-54	B. A.	Marketing	Bus. Mgt.
University of Wyoming	1956-67		Educ.	
Colorado State College	1958		Bus. Educ.	

B. Professional Background

Teacher--coordinator, D. E.	Sheridan School District 7	1958-67	9
Teacher--coach	Sheridan, Wyoming	1955-58	3

C. Professional Affiliations

American Vocational Association

D. Publications -- none reported to date.

E. Credentials

Standard Teaching Certificate, Distributive Education, Secondary	Wyoming	1960	7 years

F. Nominated for Institute by

Bruce C. Perryman
Director
Wyoming Research Coordinating Unit

Herbert P. Halberg

A. Educational Background

University of Hawaii	1951-1965		T & I	Education
Colorado State University	1962-1963	B. Ed.	T & I	Journalism
Colorado State University	1965	M. Ed.	Adm.	T & I Ed.

B. Professional Background

Instructor, Air Frame Related Shop Courses; and Department Head, Math, Physics	Honolulu Community College	1957-67	10 years
Administrative Assistant	Honolulu Community College, Honolulu	1967-	1 year

C. Professional Affiliations

American Vocational Association

D. Publications -- none reported to date.

E. Credentials

Professional Vocational Education Teaching Certificate

F. Nominated for Institute by

D. R. Lynn
Director of Operations and Coordinator
Hawaii Research Coordinating Unit

Henry B. Kalani

A. Educational Background

University of Denver	1952-1956	B. S. B. A.	Hotel/Rest.	
Michigan State University	1958-1959	M. B. A.	Bus. Admin.	Hotel Mgt.
University of Hawaii	1966			

B. Professional Background

Asst. Director, Food Services	Rutgers University	1959-61	2 years
Director, Food/Housing	Michigan Technical University	1962-63	1 year
Asst. Professor, Institutional Management	Univer. of Hawaii	1963-64	1 year
Specialist, Dept. of Labor	Univer. of Hawaii	1964-65	1 year
Chairman, Hotel/Restaurant Dept.	Kapiolani Community College, Honolulu	1965-68	3 years

C. Professional Affiliations

American Vocational Association

D. Publications -- none reported to date.

E. Credentials -- none listed

F. Nominated for Institute by none

James V. Lacy, Jr.

A. Educational Background

Oregon State University	1951-1955			
Oregon State University	1958-1959	B. S.	Ag. Ed.	Ag. Eng.
Oregon State University	1959-1960	M. Ed.	Ag. Ed.	Guidance

B. Professional Background

Teacher, Vocational Agric.	Malin, Oregon	1960-66	6 years
Consultant, Secondary & Jr. High	Klamath County Sch. District, Klamath Falls Oregon	1966-67	1 year
Vocational Consultant	OCCI Mid Columbia Education Center The Dales, Oregon	1967-68	1 year

C. Professional Affiliations

American Vocational Association	1960	8 years
Oregon Vocational Association	1960	8
Oregon Council of Local Administrators of Occupational Education	1966	2

D. Publications

A Study of the Employment Opportunities, Human Resources, and Educational Resources of Klamath County.

E. Credentials

Standard Secondary	Ore.	1967	5 year
Vocational Supervisor	Ore.	1966	5 year

F. Nominated for Institute by

Wm. G. Loomis
State Director of Vocational Education
Oregon Division of Community Colleges and
Vocational Education

Joe W. Lemley

A. Educational Background

Northeastern State	1946-1949	B. S.	Ind. Ed.	Phy. Ed.
Oklahoma State University	1949-1952	M. S.	Admin.	
Tulsa University	1962		Admin.	
Course work completed for Ed. D.				

B. Professional Background

Principal, High School	Council Hill, Okla.	1949-52	3 years
Teacher, Design/drafting	Tulsa, Oklahoma	1952-62	10 years
Asst. Principal, Public Schools	Tulsa, Oklahoma	1962-65	3 years
Principal, Voc-Tech. School, Post-Secondary	Tulsa Area Vocational Technical Education Center, Tulsa, Okla.	1965-	3 years

C. Professional Affiliations

American Vocational Association	1954	14 years

D. Publications -- none reported to date.

E. Credentials

Life Certificate, Industrial Arts 7-12	Okla.	1949	Life
Standard T & I Certificate-Secondary	Okla.	1965	1970
Standard Administrator Certificate	Okla.	1967	1972

F. Nominated for Institute by

Elmer F. Ferneau
Dean, College of Education
University of Tulsa

Maynard W. Mathers

A. Educational Background

Central Michigan University	1954-1960	B. S.	Ind. Arts.	Drafting Chemistry
University of Michigan	1961-1963	M. A.	Trade & Ind.	
Michigan State University	1966-1967	2 sem hrs	Voc. Ed.	
University of Michigan	1966	12 sem hrs	Voc. Ed.	

B. Professional Background

Teacher, Ind. Arts, Sciences, Drafting, Woodshop	Waterford Township High School, Pontiac, Mich.	1960-65	5 years
Coop-Coordinator	Waterford Township Schools, Pontiac, Mich.	1965-68	3 years

C. Professional Affiliations

American Vocational Association, Mich. Ind. Ed. Society, Mich. Occ. Ed. Assn., N. E. A.

D. Publications -- none reported to date.

E. Credentials

Secondary Permanent Ind. Arts (K-12)	Michigan	1960
Secondary Permanent Drafting/Chem (9-12)	Michigan	1963
Vocational Provisional-Coop and Related Instruction (9-12)	Michigan	1965

F. Nominated for Institute by

Ralph C. Wenrich
Professor of Vocational Education
University of Michigan

Robert Miller

A. Educational Background

Utah State University	1954-1957	B. S. E. E.	Elec. Eng.
Utah State University	1964-1965	M. I. E.	Ind. Ed.
Arizona State		39 sem hrs	
University of Utah		6 sem hrs	
Northern Arizona U.		9 sem hrs	
Oregon State University		6 qr. hrs.	

B. Professional Background

Instructor, Electronics	Northern Arizona Univ.	1962-64	2 years
Supervisor, Industrial Ed.	Alaska State Depart. of Educ. Juneau, Alaska	1964-68	4 years
Education Director, Technical Education	Phoenix, Arizona	1959-62	3 years
Engineer, Electronics	Phoenix, Arizona	1957-59	2 years

C. Professional Affiliations

American Vocational Association	1964	2 years
Institute of Electrical and Electronic Engineers	1956	12 years
NASSTIE	1966	2 years
NEA	1965	3 years

D. Publications -- none reported to date.

E. Credentials

Professional Certificate #68	Alaska

F. Nominated for Institute by

Ralph W. Matthews
Acting Asst. Director, Vocational Education
Alaska State Department of Education

Robert L. Nichols

A. Educational Background

Texas A & I College	1949-1952	B. S.	Geo.	Soc. Sci.
Texas A & I College	1952-1956	M. S.	Psy.	Educ.

B. Professional Background

Teacher, Elementary 4-5-6		1952-59	7 yr
Teacher, Special Education	Junior High	1959-60	1 yr
Principal, Elementary School	Elementary	1960-61	1 yr
Examiner, Disability		1961-64	3 yr
Consultant Research	Texas Educ. Agency	1964-66	2 yr
Consultant Occupational Research	Texas Educ. Agency	1966-68	2 yr

C. Professional Affiliations

American Vocational Association
American Vocational Education Research Association
Texas State Teachers Association

D. Publications -- none reported to date

E. Credentials

Administration - all levels	1955	Life
Professional Life Counselor	1966	Life
Professional Life Teacher	1952	Life
Elementary, Secondary, Professional Life	1952	Life
Special Education, Provisional	1955	5 yr.

F. Nominated for Institute by

John R. Guemple
Asst. Commissioner Vocational Education
Texas Education Agency

Russell Paulsen

A. Educational Background

Westmar College	1941-1955	B. A.	Bus. E. /Econ	History
Colorado State College	1956-1959	M. A.	Bus. Ed.	
University of Wisconsin	1966	3 sem hrs.		
University of North Dakota	1966	7 sem hrs.		
Certificate in Data Processing	1966			

B. Professional Background

Instructor, Business Education, High School	1955-59	4 yr.
Instructor, Business Education, Junior College	1959-61	2
Instructor, Business Education, Wisconsin State University	1961-64	3
Coordinator and Supervisor, Business Education, Marathon County Technical Institute, Wausau, Wisc.	1964-67	3
Coordinator Continuing Education and Research, Marathon County Technical Institute, Wausau, Wisc.	1967-	1

C. Professional Affiliations

Delta Pi Epsilon
American Vocational Association
United Business Education Association
MDTA Association

D. Publications

3 dealing with Business Education, 1962, 1963, 1964

E. Credentials

Wisconsin Business Education Coordinator Certificate	Wisc.	1967	Life
Minnesota, Secondary & Jr. College, Bus. Ed. Certificate	Minn.	1969	
Life Certificate, Secondary Bus. Ed.	Colo.		

F. Nominated for Institute by none

John L. Peterson

A. Educational Background

Kent State University	1950	M.A.	T & I

B. Professional Background

Teacher, T & I	Kent State University	1952-56	4 years
Training Supervisor, Trng. Dept.	Firestone Tire Co.	1956-64	9 years
Supervisor, M.D.T.	Phoenix Union H.S.	1964-66	2 years
Asst. Principal	Area Vocational Center, Phoenix Union High School Phoenix, Arizona	1966-68	2 years

C. Professional Affiliations

American Vocational Association	1949	Life

D. Publications -- none reported to date.

E. Credentials

Arizona Administration and Teaching, Vocational Education	1967	5 years

F. Nominated for Institute by none

Bill G. Powers

A. Educational Background

Oklahoma State University	1948-1952	B.S.	Voc. Ag.	Econ.
Oklahoma State University	1952-1958	M.S.	Voc. Ag.	Adm.
Oklahoma State University and Tulsa University	1958-1967		H. Ed.	Adm.
Colorado State University	summer 1966	5 sem hr.	Voc. Tech'l Ed.	
Oregon State University	summer 1967			

B. Professional Background

Instructor, Vocational Agriculture	Mountain Park Public School	1953-55	2 yr.
Director, Short Course	Oklahoma State University	1955-58	3 yr.
Instructor, Vocational Agriculture	Stillwater Public Schools	1958-59	1 yr.
Asst. Dean. of Men	Oklahoma State University	1959-62	3 yr.
Dean of Students	Eastern Oklahoma A & M	1962-63	1 yr
Asst. Dean of Men	Oklahoma State University	1963-65	2 yr.
Coordinator, Technical Education	Eastern Oklahoma A & M	1965-66	1 yr.
State Supervisor, Technical Educ.	Okla. State Board for Voc. Ed.	1966-67	1 yr.
Research Associate, Technical Ed.	Oklahoma State University	1967-	

C. Professional Affiliations

American Vocational Association	1953	9 years
Oklahoma Vocational Association	1953	9 years
Oklahoma Education Association	1953	15 years
American Technical Education Association	1964	4 years

D. Publications

Master's thesis; 4 Federal Proposals, all approved and funded.

E. Credentials

Vocational Certificate	Okla.	1958	5 yrs.
Counselor's Certificate	Qualified but not requested		
Administrator's Certificate	Qualified but not requested		

F. Nominated for Institute by none

William E. Reynolds

A. Educational Background

Northeast Missouri State Col.	1946-1950	B. S.	Ind. Arts.	Science
University of Illinois	1957-1959	M. S.	Ind. Ed. Adm.	
Millikin University	1954	10 sem hrs.		
Southern Illinois University	1967	4 sem hrs.		
Oregon State University	1967	6 sem hrs.		

B. Professional Background

Teacher, Junior High	School Dist. #61, Decatur	1949-57	8 yr.
Dept. Head, Tech Drafting	School Dist. #61, Decatur	1957-64	7 yr.
Director, Vocational Ed.	School Dist. #61, Decatur	1964-67	3 yr.
Director,	Mid Valley Area Vocational Center, Maple Park, Ill.	1967-68	1 yr.

C. Professional Affiliations

American Vocational Association	1952	16 years.
Illinois Vocational Association	1952	16 years.
Phi Delta Kappa	1968	1 year

D. Publications

"Occupational Talent Search" (co-author)
Illinois Vocational Progress -- various articles

E. Credentials

All Grade Supervisor Certificate (K-14)	Ill.	1964	non-expiring

F. Nominated for Institute by

Vernon Burgener
Coordinator
Illinois Research Coordinating Unit

Welcome Rumbaugh

A. Educational Background

Oregon State University	1941-52	B. S.	Ag. Ed.	Science
Oregon State University	1955-62	M. Ed.	Ed.	T & I
Portland State College	1962	12 sem hrs.	Ad.	

B. Professional Background

Instructor, Vocational	Columbia County Schools	1955-66	11 yr.
Vocational Technical Supervisor	Lane County Intermediate Education District, Eugene, Ore.	1966-68	2 yr.

C. Professional Affiliations

American Vocational Association	1952	15 years
O. E. A.	1952	15 years
N. C. L. A.	1967	1 year

D. Publications -- none reported to date

E. Credentials

Secondary Principals Certificate	Ore.	1965	1970
Vocational Agriculture Certificate	Ore.	1964	1969
Regular Secondary Certificate	Ore.	1964	1969

F. Nominated for Institute by

William G. Loomis
State Director of Vocational Education
Oregon State Division of Community Colleges
and Vocational Education

Thomas J. Straka

A. Educational Background

Washington State University	1945-49	B. S.	Ag. Ed.	Ag. Engr. Chemistry

B. Professional Background

Teacher, Vocational Agriculture	Lake Stevens Schools	1949-63	15 years
Dept. Head, Voc. Agriculture	Kent Public Schools	1963-64	1 year
Coordinator, Pre-Vocational Ed.	Kent Public Schools	1964-66	2 years
Director, Vocational Education	Kent Public Schools	1966-68	2 years

C. Professional Affiliations

American Vocational Association	1949	19 years
Washington Vocational Association	1949	19 years
Washington Education Association	1949	19 years
National Industrial Arts Association	1966	2 years

D. Publications -- none reported to date

E. Credentials

Vocational Directors Certificate	Washington	1966	1969
Vocational Certificate	Washington	1964	1969
General Certificate	Washington	1967	1970

F. Nominated for Institute by

Ernest Kramer
Asst. Supt. Public Instruction for Vocational Education
State Department of Education

Angelo J. Tedesco

A. Educational Background

Providence College	1951-55	B. A.	Educ.	History-English
University of Connecticut	1956-57			History-English
Wesleyan University	1958-59			History-English
Central Conn. St. Teachers	1961-64	M. A.	Ad. Voc. Ed.	

B. Professional Background

Teacher	Torrington Tech School	1956-57	1 yr.
Teacher	Waterbury Tech School	1957-63	7 yr.
Consultant, Program Development	State Dept. of Education	1963-68	5 yr.

C. Professional Affiliations

American Vocational Association	1955	13 years

D. Publications -- none reported to date.

E. Credentials

Standard Teaching Certificate High School Social Studies, History, English	Conn.	1955
State Supervisors Certificate	Conn.	1967

F. Nominated for Institute by

Joseph F. Murphy
State Director of Vocational Education
State Department of Education

Harvey G. Thiel

A. Educational Background

Montana State	1946-48			
Rocky Mountain College	1949-52	B. S.	Ind. Arts.	Health & P. E.
Arizona State College	1959-63	M. A.	Ind. Arts	I. D. S.
Stanford University	1963			
Southern Nevada University	1956-65			

B. Professional Background

Instructor	Klein High School	1952-53	1 yr
Instructor, Chairman Voc. Dept.	Rancho High School, Clark County School District	1953-63	10 yr.
Counselor, MDTA	State Division, Vocational Technical and Adult Educ. Carson City	1964-65	1 yr.
State Supervisor, T & I Educ.	State Division, Vocational Technical Education Division	1965-67	2 yr.
Area Administrator	State Division Vocational, Technical and Adult Education, Las Vegas	1967-	

C. Professional Affiliations

American Vocational Association	1959	9 years
Nevada Industrial Education Association	1959	9 years
Nevada Vocational Association	1959	9 years

D. Publications -- none reported to date.

E. Credentials

High School Professional-Secondary Certificate
Vocational Teaching Certificate, Sec.
Vocational Technical Administrative Professional Certificate
Administrative Professional Certificate

F. Nominated for Institute by

John W. Bunten
State Director Vocational Technical Education
State Department of Education

Billy T. Vice

A. Educational Background

Berea College, Berea, Ky.	1957-61	B. S.	Agriculture	Science
University of Kentucky	1961-68	M. S.	Agr. Ed.	Agriculture
The Ohio State University				

B. Professional Background

Teacher of Agriculture	Bourbon County, Ky.	1962-66	4 years
Specialist--Instructional Materials	University of Ky.	1966-68	2 years

C. Professional Affiliations

American Vocational Association	1962 to present
Kentucky Vocational Association	1962 to present
National Education Association	1962 to present
Kentucky Education Association	1962 to present
Kentucky Vocational-Ag. Teachers Association	1962 to present
Phi Delta Kappa	
Phi Kappa Phi	

D. Publications (available from the Instructional Materials Laboratory, 151 Taylor Education Building, University of Kentucky, Lexington, Ky. 40506

Chemical Properties of Soils
Soil Management for Efficient Land use
Soil in Relation to Crops
Principles of Plant Growth
Propagation of Plants by Seeds
Vegetative Propagation of Plants
Keeping Records
Summarizing, Analyzing and Using Records
Selecting and Planning Agricultural Experience Programs
Scheduling and Planning the Carrying Out of Improved Practices in Agriculture
Keeping Livestock Healthy
Beef Production
"Focus" -- a teaching materials newsletter

E. Credentials

Standard in Vocational Agriculture (Sec.)	Kentucky	1964 for 10 years

F. Nominated for Institute by

George L. Luster
Director, Instructional Materials
University of Kentucky

Dewain Washburn

A. Educational Background

Utah State University	1941-42		Ind. Ed.	Wood work
Utah State University	1946-49	B. S.	Ind. Ed.	Wood work
Utah State University	1956-59	M. S.	Sch. Ad.	
University of Utah	1950-51	+45 sem hrs.	Adm., Voc. Ed.	

B. Professional Background

Instructor, Ind. Arts	Elsinore Jr. High	1945-1949	4 years
Instructor, Ind. Arts	South Sevier High	1949-1961	12 yr.
Principal, High School	North Sevier	1961-63	2 years
Director,	Sevier Valley Tech, Richfield, Utah	1963-68	5 years

C. Professional Affiliations

American Vocational Association	1951	17 years
Utah Vocational Association	1960	8 years
Utah Education Association	1945	23 years

D. Publications -- none reported to date

E. Credentials

General Administrations Secondary-Elem.	Utah	1959	9 years
Vocational Education Administration	Utah	1959	9 years
Guidance Counselor Certificate	Utah	1963	5 years
Driver Education Certificate	Utah	1955	6 years
General Secondary Teachers Certificate	Utah	1948	20 years
Class A Industrial Arts Certificate	Utah	1948	20 years

F. Nominated for Institute by

Marks Nichols
State Director of Vocational Education
Utah State Board of Education

John Stephens
Director
Utah Research Coordinating Unit

Clifford Zenor

A. Educational Background

Bradley University	1958-61	B. S.	Voc. Ed.	Admin.
University of Illinois	1961-66	M. S.	Voc. Ed.	

B. Professional Background

Teacher, Machine shop, welding	Moline Board of Education, Moline, Illinois	1961-66	5 yr.
Supervisor of Curriculum	State Board of Education, Madison, Wisconsin	1966-68	2 yr.

C. Professional Affiliations

American Vocational Association

D. Publications -- none reported to date.

E. Credentials

Supervisor of Vocational-Technical and Adult Education certificate	Wisconsin

F. Nominated for Institute by

C. L. Greiber
State Director of Vocation, Technical and Adult Education
Wisconsin State Board of Vocational, Technical and Adult Education

APPENDIX D

Administrative Staff, Resident Faculty, and Visiting Lecturers for Curriculum Development Institute

Administrative Staff

Dr. T. Antoinette Ryan Institute Director	Director, Research Coordinating Unit School of Education
Dr. Victor Doherty Institute Coordinator	Director, Administrative Research Department Portland Public Schools
William S. Fraser Assistant Coordinator	Graduate Student, Agricultural Education Oregon State University
David Phillips Assistant Coordinator	Graduate Student, Forest Management Oregon State University
Mrs. Anita Whittle Administrative Assistant	School of Education Oregon State University
Mrs. Sandra Phillips Secretary	School of Education Oregon State University

Resident Faculty

Dr. Henry A. Ten Pas, Chairman, Division of Vocational Education, Adult Education and Community Colleges, School of Education, Oregon State University

Dr. Pat Atteberry, Head, Department of Industrial Education, Oregon State University

Dr. May DuBois, Head, Department of Home Economics Education, Oregon State University

Dr. C. T. Yerian, Head, Department of Business Education and Secretarial Science, Oregon State University

Visiting Lecturers

Dr. Dwight Allen, Associate Professor, and Director, Flexible Scheduling Project, Stanford University, California (Represented by Dr. Jack McLeod)

Dr. Dorothy Barnes, Director, Tongue Point Job Corps Center, Astoria, Oregon

Dr. Jack E. Brookins, President, Southwestern Oregon Community College, Coos Bay, Oregon

Eldon Cone, Director, Oregon State Employment Service, Salem, Oregon (Represented by Bruce McKinlay)

Dr. R. E. Daggett, Program Director, Tongue Point Job Corps Center, Astoria, Oregon

Dr. John D. Krumboltz, Professor of Education and Psychology, Stanford University

Dr. Wm. G. Loomis, State Director of Vocational Education, Salem, Oregon

Patrick J. Mailey, Head, Data Processing Department, Vocational Technical Division, Clover Park School Dist. 400, Lakewood Center, Washington

Dr. V. Anthony Maniscalco, Assistant Director, Center of Technological Education, San Francisco State College

Dr. H. V. McAbee, Deputy Director, Tongue Point Job Corps Center, Astoria, Oregon

Dr. Gordon McCloskey, Professor of Education, Washington State University, Pullman, Washington

Bruce McKinlay, Labor Analyst, Oregon State Employment Service, Eugene, Oregon

Dr. Jack McLeod, Assistant Director, Flexible Scheduling for Vocational Education through Computer Use, Stanford University

Aki Nishimura, Vice Principal, Benson Polytechnic High School, Portland, Oregon

James O'Gara, Director, Vocational Education, Portland Public Schools, Portland, Oregon

Dale Pinckney, Supervisor of Curriculum Development, Division of Community Colleges and Vocational Education, Salem, Oregon

Dr. Gordon L. Quick, Supervisor, Teacher Training, Clover Park School Dist. 400, Lakewood Center, Washington

Marvin R. Rasmussen, Principal, Benson Polytechnic High School,
Portland, Oregon.

Darrell L. Ward, Coordinator, Vocational Teacher Education,
Division of Continuing Education, Salem Oregon

U. S. Office of Education personnel invited to serve as visiting lecturers but unable to accept due to federal restrictions on travel included the following:

Dr. David Bushnell, Director, Division of Comprehensive and
Vocational Education Research

Dr. Mary Lee Hurt, Research Associate, Division of Comprehensive
and Vocational Education Research

Dr. Otto Legg, Assistant Director, Program Planning and Development, Division of Vocational and Technical Education

Mrs. Sylvia G. McCollum, Program Planning Officer, Division of
Comprehensive and Vocational Education Research

APPENDIX E

Vocational Education Curriculum Development Institute Program

June 18, 1967 2:00 to 5:30 P. M.

Welcome and Introductions — Dr. T. Antoinette Ryan

University Registration

Refreshments

Program Preview — Dr. T. Antoinette Ryan

- General Information
- University facilities, regulations
- Participant travel, subsistence
- Tours, trips, summer cultural program
- Program purposes and schedule of activities
- Participant packets of program materials
- Task Force project

Question-Answer Session

June 19, 1967 9:00 A. M. to 4:00 P. M.

Presentation: A Decision Model of Curriculum Development
Dr. T. Antoinette Ryan

Discussion Groups — Leaders: Angelo Tedesco
Thomas Straka

Reports of vocational education programs — Institute Participants

June 20, 1967 9:00 A. M. to 4:00 P. M.

Discussion: Taxonomies of Behavioral Objectives
Moderator: Dr. Victor Doherty

Discussion Groups — Leaders: Dr. James Albracht
Anthony Cipriano

Presentation: Pre-technology Program: An Operational Framework for Curriculum Development
Dr. Anthony Maniscalco

Question-Answer Session

Summary Statement: Dr. Victory Doherty

June 21, 1967 9:00 A. M. to 4:00 P. M.

Presentation: Definition of Objectives
Dr. T. Antoinette Ryan

Presentation: Philosophy of Vocational Education
Dr. Henry A. Ten Pas

Discussion Groups Leaders: Bill Allgood
Clifford Zenor

Presentation: Knowledge Clusters in Curriculum Development
Dr. Gordon McCloskey

Question-Answer Session

Summary Statement: Dr. Victor Doherty

June 22, 1967 9:00 A. M. to 4:00 P. M.

Discussion: Developing an Organic Curriculum
Moderator: Dr. Victor Doherty

Discussion Groups Leaders: Herbert Halbert
Alfred Flanigin

Presentation: Vocational Education Curricula Based on Occupational Clusters
Dr. William G. Loomis and
Dale Pinckney

Question-Answer Session

Summary Statement: Dr. Victor Doherty

June 23, 1967   9:00 A. M. to 4:00 P. M.

Discussion: Developing the Vocational Course
Moderator: Dr. Victor Doherty

Discussion Groups   Leaders: Robert Nichols
William Reynolds

Task Force Assignment: Developing a Curriculum Guide

Task Group Leaders: Angelo Tedesco, Conrad Edwards,
Clifford Zenor, Orville Buesing,
Joe Lemley, Virginia Clapp

5:00 to 8:00 P. M.

Informal Social Hour for Institute Participants,
Oregon State University Faculty and State Department of
Education Personnel
Dr. T. Antoinette Ryan, Hostess

June 26, 1967   9:00 A. M. to 4:00 P. M.

Discussion: Planning and Organizing Curriculum
Moderator: Dr. Victor Doherty

Discussion Groups   Leaders: Aaron Ahn
Jack Ballard

Presentation: Using Employment Data in Planning Vocational
Education Curricula
Bruce McKinlay

Question-Answer Session

Summary Statement: Dr. Victor Doherty

June 27, 1967   9:00 A. M. to 4:00 P. M.

Presentation: Meeting Needs of Disadvantaged Youth
Dr. Victor Doherty

Discussion Groups   Leaders: James Lacy
Bill Powers

Presentation: Using Information about Human Resources, Occupational Opportunities and Educational Resources in Curriculum Development
Dr. William G. Loomis and Dale Pinckney

Discussion Leaders: Angelo Tedesco, Conard Edwards, Clifford Zenor, Orville Buesing, Joe Lemley, Virginia Clapp

Summary Statement: Dr. Victor Doherty

June 28, 1967 9:00 A. M. to 4:00 P. M.

Presentation: Developing Special Curricula for Students with Special Needs
Dr. Victor Doherty

Discussion Leaders: Dewain Washburn
Conard Edwards

Presentation: Meeting Needs of Disadvantaged Youth
Dr. T. Antoinette Ryan

Presentation: Perspectives and Questions for Vocational Education
James O'Gara

Reaction Groups

Summary Statement: Dr. Victor Doherty

6:00 to 9:00 P. M.

No-host Picnic for Institute Participants

June 29, 1967 9:00 A. M. to 4:00 P. M.

Discussion: Significance of Work Experience to Youth
Orville Buesing, Robert Miller and Virginia Clapp

Discussion Groups Leaders: Maynard Mathers
Henry Bauer

Task Force Assignment: Developing a Curriculum Guide

Task Group Leaders: Angelo Tedesco, Conard Edwards,
Clifford Zenor, Orville Buesing,
Joe Lemley, Virginia Clapp

June 30, 1967

Discussion: Considering the Learners in Developing Curriculum
Moderator: Dr. Victor Doherty

Discussion Groups Leaders: Joe Lemley
Henry Kalani

Presentation: Elective High School Plan
Dr. Gordon L. Quick

Question-Answer Session

Summary Statement: Dr. Victor Doherty

July 3, 1967 9:00 A. M. to 4:00 P. M.

Discussion: Function of Task Analysis in Developing Lesson Units
Moderator: Dr. Victor Doherty

Discussion Groups Leaders: Russell Paulsen
Virginia Clapp

Presentation: Flexible Scheduling for Vocational Education Through Computer Use
Dr. Jack McLeod

Reaction Groups

Summary Statement: Dr. Victor Doherty

July 5, 1967 9:00 A. M. to 4:00 P. M.

Discussion: Developing Lesson Units
Moderator: Dr. Victor Doherty

Discussion Groups Leaders: John Peterson
Bill Daniels

Presentation: Occupational Preparation of Individuals for Work
Dr. Pat Atteberry

Reaction Groups

Film: Tongue Point Job Corps Center

Task Force Assignment: Developing a Curriculum Guide

July 6, 1967 9:00 A. M. to 4:00 P. M.

Discussion: Planning Sequence of Instructional Units and Identifying Sources of Instructional Materials
Moderator: Dr. Victor Doherty

General Discussion Session Chairmen: Robert Miller
Welcome Rumbaugh

Presentation: Using a Systems Approach
Dr. Patrick J. Mailey

Question-Answer Session

Summary Statement: Dr. Victor Doherty

July 7, 1967 7:00 A. M. to 10:00 P. M.

Guided Tour: Benson Polytechnic High School, Portland.
Moderators: Dr. Marvin Rasmussen
Aki Nishimura

Guided Tour: Tongue Point Job Corps Center, Astoria
Moderators: Dr. Dorothy Barnes, Dr. H. V. McAbee
Mr. Robert E. Daggett

No host dinner, Portland, Oregon

July 10, 1967   9:00 A. M. to 4:00 P. M.

Discussion: Clustering Approach to Development of Curriculum for Six Technologies
Chairmen: Wade Anderson
Harvey Thiel

Presentation: Evaluation of Vocational Education Programs
Dr. John D. Krumboltz

Question and answer session

July 11, 1967   9:00 A. M. to 4:00 P. M.

Discussion: Evaluation of Vocational Education
Moderator: Dr. Victor Doherty

Presentation: The Home Economics Curriculum
Dr. May DuBois

Reaction Groups

Task Force Assignment: Developing a Curriculum Guide

Task Group Leaders: Angelo Tedesco, Conard Edwards, Clifford Zenor, Orville Buesing, Joe Lemley, Virginia Clapp

July 12, 1967   9:00 A. M. to 4:00 P. M.

Guided Tour. Industrial Education Department, Oregon State University
Host: Dr. Pat Atteberry

Task Force Assignment: Developing a Curriculum Guide

Task Group Leaders: Angelo Tedesco, Conard Edwards, Clifford Zenor, Orville Buesing, Joe Lemley, Virginia Clapp

Presentation: Oregon Program of Vocational Education Leadership Development
Darrell L. Ward

Task Force Assignment: Developing a Curriculum Guide

July 13, 1967 9:00 A. M. to 4:00 P. M.

Task Force Assignment: Developing a Curriculum Guide
Dr. James Albracht, Chairman

Presentation: Challenges of Vocational Education
Dr. Jack Brookins

Institute Evaluation

Review and Closing Remarks: Dr. T. Antoinette Ryan

APPENDIX F

Lectures Given During Curriculum Development Institute

June 18

Program Preview: Institute on Vocational Education Curriculum Development

June 19

A Decision Model of Curriculum Development -- Dr. T. Antoinette Ryan

June 20

Pre-technology Program: An Operational Framework for Curriculum Development -- Anthony Maniscalco

June 21

Definition of Objectives -- T. Antoinette Ryan

Philosophy: Base for Curriculum Design -- Henry A. Ten Pas

Knowledge Clusters in Curriculum Development -- Gordon McCloskey

June 22

Developing a Job Cluster Approach to Vocational Education -- William G. Loomis and Dale Pinckney

June 26

Using Employment Data in Planning Vocational Education Curricula -- Bruce McKinlay (Representing Eldon Cone)

June 27

Using Information about Human Resources, Occupational Opportunities and Educational Resources in Curriculum -- William G. Loomis and Dale Pinckney

June 28

Developing Special Curricula for Students with Special Needs -- Victor Doherty

Meeting Needs of Disadvantaged Youth -- T. Antoinette Ryan

Perspectives and Questions for Vocational Education -- James O'Gara

June 30

Elective High School Plan -- Gordon L. Quick

July 3

Flexible Scheduling for Vocational Education Through Computer Use -- Jack McLeod (Representing Dwight Allen)

July 5

Occupational Preparation of Individuals for Work -- Pat H. Atteberry

July 6

Using a Systems Approach -- Patrick J. Mailey

July 7

Vocational Education at Benson Polytechnic High School -- Marvin Rasmussen and Aki Nishimura

Tongue Point Job Corps Center Program and Purposes -- Dorothy Barnes, H. V. McAbee, and Robert E. Daggett

July 10

Evaluation of Vocational Education Programs -- John D. Krumboltz

July 11

Home Economics Curriculum -- May DuBois

July 12

Oregon Program of Vocational Education Leadership Development -- Darrell L. Ward

July 13

Challenges of Vocational Education -- Jack E. Brookins

Review and Closing Remarks -- T. Antoinette Ryan

APPENDIX G

Texts of Lectures Given at Vocational Education Curriculum Development Institute, 1967

PREVIEW: INSTITUTE ON VOCATIONAL EDUCATION CURRICULUM DEVELOPMENT

T. Antoinette Ryan[*]

It is my pleasure to welcome you to this national institute on vocational education curriculum development, and to extend to you greetings from Dr. Franklin R. Zeran, Dean of the School of Education and Dr. William G. Loomis, State Director of Vocational Education. The vocational education faculty of Oregon State University and the state vocational staff join me in expressing pleasure at having the opportunity of hosting this national vocational education training program. We feel justly proud to have in Oregon as participants of the institute thirty leaders in vocational education. You come to this institute from state departments of education, Research Coordinating Units, community colleges and technical institutes, area vocational centers, public secondary schools, and institutions of higher education. You represent twenty-one states, from Massachusetts to Hawaii; from Texas to Alaska. You are men and women of accomplishment. You have been involved in significant aspects of the forward thrust implemented in vocational technical education since passage of the Vocational Education Act of 1963. The contributions of many of you to the building of a dynamic, prestigious vocational education curriculum antedates the 1963 Act. You currently are participating in a variety of exciting and noteworthy undertakings in vocational education. You were selected as participants in the institute because of your demonstrated leadership. Thus, we assume that you have come with a strong background; that you have characteristics and traits of leadership, and that you are in positions in which you can implement leadership roles. It is our aim through the institute program to equip you with practical skills and to add to your theoretical knowledge so you can more effectively implement the role of change agent. It is our hope that when you return to your respective homes that you will be agents of change--to the end of improving and expanding vocational technical education. I would hazard a guess that this will not be an easy task for you. You probably will encounter resistance and face obstacles. Change is not easy to effect. Still, it is our hope that you will gain through this institute additional strength in knowledge and skills; thus improving your chances of effectively acting as an agent of change.

The institute, supported by the U. S. Office of Education Division of Comprehensive and Vocational Education Research, is intended to serve as a vehicle through which you can be prepared to make even more significant contributions to vocational-technical education than you are making at the present time. The institute was planned in consort with the U. S. Office of Education Divisions of Comprehensive and Vocational Education Research and Division of Vocational and Technical Education, and the State Department of Education. It is the hope of all those involved in planning the institute that it will lead to improvement and expansion of vocational technical education through continuing improvement and expansion of quality vocational education curriculum.

The purpose of this institute is to equip vocational education leaders--that is, you, the participants--with practical skills and theoretical knowledge requisite to effective implementation of the change agent role in vocational education curriculum development. Specifically the objectives of the institute are, first, for you to acquire added knowledge and understanding of curriculum design and theory; second, for you to become more familiar with advances and innovative programs and practices in vocational technical education; and third, for you to become proficient in using a decision model of curriculum development. The program to achieve institute objectives will include lectures, discussion and reaction groups, and question-answer sessions; outside readings of selected reference materials; and work on a task force project--the development of a curriculum guide. What are your responsibilities? I anticipate that each of you will be an active participant. This means active participation in all facets of the institute. We intend to have thirty vocational education leaders as participants, and will bring in as resource persons selected specialists in vocational education and related disciplines to share with participants results of relevant research, descriptions of innovative programs, statements of approaches and challenges. You will be expected to do assigned readings. Nine of the eleven references listed on your reading list are included in your packet. The other two are on reserve in the reserve book room of the library. In addition to the assigned readings, you can do as much reading of supplementary materials as you wish. If you do outside reading over and beyond what is assigned, and summarize your readings, we will duplicate and distribute these materials to all participants. The readings are designed to assist in building a background of information, relevant to our purpose. In the task force project, you will work in six task groups to develop a guide for curriculum development. The outline of this project is included in your packet. On page three of the syllabus a topical outline of the institute program is given to provide an overview for the sequence of the four-week period. You will note that some time will be devoted in week one to consideration of a philosophical base, the defining of a curriculum development model, and the defining of objectives. Week two will be concerned with the information dimension of curriculum design, the kinds of information needed, sources of information, selection of information, and identification of relevant reliable information. In week three we will be looking to the use of information in making curriculum decisions; and finally, in week four, we will be concerned with measurement and evaluation of vocational education curricula.

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[*] T. Antoinette Ryan, Institute Director, and Director, Research Coordinating Unit, Oregon State University.

The program is intensive and demanding. However, it is my fervent hope that, despite the high level energy input requirement of the program, you will find this to be a memorable experience--not only on account of the satisfaction which you will derive from realizing your contribution to improvement and expansion of quality vocational technical education, but also because of the pleasure you will have in developing new acquaintances and sharing experiences with kindred souls. I hope that out of this four-week program some lasting friendships and professional attachments will be made. It is my firm belief that through the pooling of resources and the working together much progress will be made in making vocational education the education of this era.

The success of this institute rests mainly in your hands. You have a big task to do while you are here. You will have an even larger responsibility in implementing the institute ideas and concepts after you return to your positions of leadership. What you do here in the next four weeks will be important to the future of vocational technical education. What you will do in the next years in your respective leadership roles can make a significant impact on the future of vocational technical education. I can only offer you the challenge. I am sure you will rise to meet it.

Once again, let me say, on behalf of Dean Zeran and the vocational education faculty at Oregon State University, and Dr. William G. Loomis and his staff in the Division of Community Colleges and Vocational Education, "Welcome to this national institute on vocational education curriculum development." We are glad to have you here. I hope you will enjoy and benefit from your institute experience.

A DECISION MODEL OF CURRICULUM DEVELOPMENT

- T. Antoinette Ryan*

This morning I will attempt to define a frame of reference to serve as a guide for your deliberations during this institute. It is intended that the frame of reference will provide a theoretical base for your study of curriculum development, and, at the same time, serve as an orienting structure to facilitate integrating of thoughts and discussions about vocational-technical curriculum building. The frame of reference implements decision model conceptualizing curriculum development as a process growing out of a broad structural base, and implementing a research strategy for making curriculum decisions.

At the outset we assume that education is a process of developing changes in behavior of an individual. Formal education, contrasted with informal education, is a conscious process involving intent and desirability. In the broadest sense, when formal and informal aspects of education are considered, it becomes apparent that education is much more comprehensive than schooling, and involves many educative agencies of society. The family, peer groups, mass media, community organizations, governmental units, business and industry contribute directly or indirectly to education of children, youth, and adults. The unique and significant factor about the formal educative process is that the learning environment is deliberately contrived and directed for the sole purpose of education, that is, securing desirable changes in behavior of particular individuals. It is customary to think of the school as synonymous with learning environments and experiences. In the broadest sense the totality of deliberately contrived environments and purposefully created experiences designed to bring about behavioral changes in learners constitutes the curriculum. The behavioral changes, that is, modifications in learners' knowledge, attitudes, skills, define objectives of education. The curriculum essentially is what the school does to achieve desired objectives, to bring about desired changes in cognitive, attitudinal, and psychomotor behaviors of individuals. Education, then, including vocational education is concerned with providing resources for guiding individuals so they can satisfy their needs in such a way as to develop behaviors necessary for maintaining and realizing more broadly values of democratic society, in a rapidly changing industrial-urban culture. This conceptualization of education identifies a structural foundation for curriculum development. You can think of the foundation as diamond-shaped, with four dimensions represented: society, culture, individuals, and values. Society refers to the organized social structure and pattern of social relations of a group of people who have learned to live and work together. Study of society is concerned with the study of positions in social space--statuses--and relations among and between these positions; for example, employee-employer statuses and conditions conducive to mutually satisfying and productive relationships between these statuses. In looking at society focus is directed to consideration of social class and stratification, and the mobility within and between classes and strata. One aspect of society which has particular relevance for vocational education is the work structure and pattern of social relations within the world of work.

The second dimension of the curriculum development foundation is culture, that is, the behavior people have learned from living and working together in a particular society. Education is concerned with fitting individuals to the culture and developing potentialities of individuals so they can contribute to and maintain the culture. In a sense this involves developing the creative capacities of individuals so they can function as productive members of society. There is a relationship

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[*] Dr. T. Antoinette Ryan, Institute Director, and Director, Research Coordinating Unit, Oregon State University.

of mutual reciprocity between the culture and the individual. Culture sets limits as to what individuals can do, determining the kinds of behaviors appropriate to a group or subgroup. Vocational education in this society is concerned with preparing individuals so they can effectively function in and contribute to a rapidly changing technological culture.

The third dimension of the curriculum development foundation is a set of values. Our value system is an outgrowth of the Christian Judaic ethic, democratic idealism, and classical economics. Out of this background we have developed a basic set of core values implementing our democratic society. Values are the reflections of that which is prized. A value is what is considered worthwhile. Values have motivating, directing and standardizing qualities, and serve as expressions of preference. Every choice is an implementation of valuing. Conflict often arises from the inability to reconcile two sets of values operating side by side. In this society we have at the same time plurality and universality of values. Since that which is prized is a function of time and place, we have in this society today a plurality of value systems. In some subgroups work is highly prized, and constitutes a key value. At the same time, in other settings, work is devalued, and this is often reflected in an image of vocational education. Despite the plurality of values, unique to time and place, there is a universal set of basic core values, on which there is general acceptance and concurrence: concern for the individual; opportunity for equalaity; freedom of the individual; worth of cooperation; belief in reason; and faith in the future. Vocational education cannot implement its purpose apart from consideration of what is valued.

The fourth dimension of the curriculum base is the individual. Every individual has potentialities for learning. Every individual possesses a unique set of characteristics--needs, aptitudes, interests, abilities. I know of no individual of whom I could say, "He has learned all he is capable of learning." A tragedy of our society today is not lack of talent, but waste of talent. Each person has limits on what he can learn, but few if any ever approach the limits. A primary function of education is to provide opportunity for discovering and developing talents of all individuals in the society. Education should be geared to the needs of the individuals, and designed to assist the individual to achieve realization of his full potentialities. In a democratic society, vocational education should be democratic education; that is, broad-based education meeting the needs of all individuals through development of basic skills, common knowledges and core values together with preparation in differentiated and specialized skills, knowledge, and attitudes appropriate for effective participation in the world of work.

The structure of the curriculum development foundation comprises four factors, society, the social relations and structures of a group of people--the world of work; culture, the way people live and work together; values, that which is prized, the desired; and individuals, their unique characteristics, basic needs, potentialities for change.

Out of this four-fold base grow the descriptions of changes to be achieved in individuals through the educative process, that is, the objectives of education. The task of curriculum development is the task of developing from available resources a contrived environment which will meet the needs of individual learners and at the same time achieve the objectives of education, developing the individuals' knowledges, understandings, attitudes, skills essential to effective and satisfying participation in the culture.

To develop a learning environment which is efficient and effective requires a strategy for making the decisions most likely to eventuate in a curriculum which is comprehensive, broad-based, and balanced, articulated vertically and horizontally, related to needs of individuals, related to realities of society, implementing basic core values, geared to primary cultural demands of the group, and realistic, practical, and possible to contrive.

The strategy of curriculum design to which I subscribe is, in fact, a systems approach. The strategy has much in common with the strategy of research. What do we mean by research? We refer to a formalized, foresighted, not far-sighted, systematic, intrinsic process of seeking answers to hypothesized problems using the scientific method. What are the components of research? The research strategy encompasses a number of steps, each of which must be implemented expertly and precisely. The researcher, in attempting to find answers to a set of questions must, first, define a researchable problem; second, state objectives which, if achieved, would alleviate the problem to some appreciable extent; third, survey the literature to see what has been done that relates to the problem; fourth, identify factors or procedures expected to alleviate the problem; fifth generate hypotheses implementing objectives and procedures; fifth select and use an appropriate experimental design to test the hypotheses; and finally, after imposing the procedural plan measure outcomes and evaluate results.

Research and curriculum development have three things in common--both implement the same general steps; both require going in circles; and both demand a full measure of commitment. One strategy of curriculum development, then, is a systems approach, implementing a research model with the curriculum builder functioning as a decision-maker, each decision deriving from logical consideration of assumptions about individuals, culture, values, and society. The structural base to curriculum development was seen as a four-sided figure. The strategy can be fitted to a circle, having six cross-points, at 12, 2, 4, 6, 8, and 10 o'clock, with each cross-point representing an essential step in effective curriculum design.

What are the steps of this curriculum strategy? Before implementing the first step, the situation must be identified. Research begins with identification of a researchable problem. It ill behooves a researcher to look for new ways to get more money to do unimportant things. The same is true in curriculum development. Curriculum building starts with identifying the situation. What is the situation with regard to human resources, employment opportunities, educational resources? What are existing and anticipated conditions of imbalance? What is needed to solve conditions of imbalance? At this point, in vocational education, attention must be given to identifying not only employment needs, but also the worker behaviors essential to meeting these needs. In identifying the situation, the researcher and curriculum builder must consider aspects of feasibility and practicality of trying to cope with the situation. They must look to questions such as, Is the situation critical, demanding attention? Is the educational undertaking that might alleviate the situation one that can be managed? Is it timely? Is there enough time? Are there resources to support it? Only after this initial assessment of the field does the curriculum strategy begin.

The first step in the curriculum circle is at 12 o'clock, and involves the definition of objectives. In research the objectives are desired outcomes, which, if achieved, can be expected to alleviate to some appreciable extent the problem. In curriculum design, the objectives, defined in behavioral terms, are the desired outcomes, the changes in learner behaviors that derive from considering components of the four-fold structural base. Objectives should be specific, pertinent, attainable, measurable.

The second step, at 2 o'clock in the curriculum circle, is an information dimension, and calls for a thorough search of relevant information. In research information must be gathered to establish a rationale for a study. In curriculum design, information must be gathered about the learners for whom the curriculum is intended, the values operating in the community, the ways of behaving prescribed by the culture. Information is needed about the community, the power structure, the world of work. Information is needed about educational resources and research. A critical consideration should be directed to the findings from research in education, the social and behavioral sciences as a way of identifying viable materials, methods, media appropriate to the attainment of defined objectives.

The third step, at 4 o'clock in the curriculum circle, is the decision-making step. In research, hypotheses are generated. In curriculum building, decisions are made. These decisions, in essence, are hypotheses. They are considered decisions pointing to the choice of components and the combinations of factors which will combine to set up the contrived environment and created experiences for learning which will be expected to eventuate in achievement of the defined objectives.

The fourth step, at 6 o'clock in the circle, is the operationalizing of decisions. In research, hypotheses are tested. In curriculum design, decisions are implemented. Implementation of the curriculum design is conceived of as something tentative, on trial, subject to revision. Thus, the possibility of having a static curriculum is precluded.

The fifth step, at 8 o'clock in the circle, is the measurement of outcomes. Research calls for measurement of outcomes associated with introduction of independent variables. Curriculum testing requires measurement of outcomes associated with implementation of the contrived learning environment.

The last step in the curriculum strategy, at 10 o'clock in the circle, is evaluation. In research, results of experimental procedures are evaluated. The curriculum strategy involves evaluation of curriculum and learners. Evaluation completes a feedback cycle, providing data to be used in starting the curriculum circle again.

This curriculum strategy, implementing a decision model in a research-based systems approach, is aimed at achieving a quality, balanced curriculum. This model of curriculum design, incorporating a four-fold structural base and systems strategy is predicated on the assumption that curriculum change is a grand involvement, not piecemeal tinkering. Rewriting a course outline, selecting a textbook, introducing closed circuit TV is not considered curriculum development. Curriculum development, as I have conceptualized the process, implies a fundamental modification of the system, a large-scale consideration of what came before, what exists at the moment, what would be a desired situation in the future. Thus, any change must involve the whole range of scope, sequencing, pacing, materials, methods, and media, and must take into account at the outset consideration of needs and characteristics of individuals and the needs and factors in the world of work.

This decision model of curriculum development holds that curriculum building or remodeling starts with considerations about individuals, society, culture and values, and involves a dynamic implementation of a systems approach, necessitating continuing and critical definition and review of the impact and conjunction of objectives, educational research and resources, individual needs and potentialities, employment demands and opportunities, instructional organization and evaluation.

It is my belief that the decision model of curriculum development is viable for vocational education, and can be expected to contribute to improvement and expansion of quality vocation-technical programs.

PRE-TECHNOLOGY PROGRAM: AN OPERATIONAL FRAMEWORK FOR CURRICULUM DEVELOPMENT

V. Anthony Maniscalco*

A single glance alone at the Roster of Participants tells me this institute on Vocational Education should prove outstanding--thanks to Dr. Ryan's organizing expertise and your concerned participation. I am, indeed, delighted and honored to be here.

The Pre-Technology Program, the topic of my presentation, is a Ford Foundation funded project. It was conceived and born of the idea to demonstrate a decision-making model of curriculum. I am personally convinced that the project exemplifies an outstanding program and innovative approach to curriculum design.

The success of the project has been handsomely documented by San Francisco's KRON-TV. If time permits, I would like to show you the documentary film. Stanford Research Institute recently received a federal grant to evaluate the nature, scope, and extent of the project's "success story." The findings should be available for publication by the end of this calendar year, 1967.

Without getting into the historical and chronological development of the project, which is a fascinating topic in itself, I have slanted my presentation in the direction of constructing an operational framework, whereby you may wish to develop plans of your own for implementing the concepts I will be discussing with you. I have built the framework under five headings:

A. The Working Hypothesis;
B. A Set of Alternatives;
C. The Pre-Technology Program;
D. A Spin-off of "Pre-Tech"; and
E. Criteria for Other Adaptations.

Pre-Technology Program

A. The Hypothesis

The value of any individual teacher's psycho-motor compentences and practical experiences in training his students for gainful employment in the trade, industrial, and technical areas is virtually vitiated by the rapid change of skill requirements and performances. Nobody is more vividly aware of the realities of this assertion or hypothesis, if you will, than the people who deal directly with youth in the real world-of-work: the employers. The "boss" is constantly chiding the schoolmen, on the other hand, to "Leave specific skill training to us;" on the other hand, to "Make sure the youngster knows his English, his math, and some science. But above all, teach him good work habits and attitudes with the accent on productiveness."

Hence, we need to consider alternatives for developing and improving upon the effectiveness of Industrial, Vocational, and Trade and Industry programs. We need to consider alternatives that involve a realistic examination of the role of content, learning modes, and teaching strategies as well as the selection, organization, and synthesis of commonalities from a number of disciplines. We need to consider alternatives that involve a closely drawn relevance to the field of application, whereby students can move adequately and comfortably from the cognitive domain to the psycho-motor domain and vice versa--and, in turn, perform better in both domains.

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Research points out that there exists a remarkably stable set of behaviors underlying all the semi-professional, technical, and skilled occupations. They are:

1. Data procurement
2. Data observation
3. Data recording
4. Data organization--tabular, graphical, mathematical;
5. Data interpretation and reporting;
6. Data evaluation and decision-making;
7. Social science, economic philosophy;
8. Finance;
9. Management and production;
10. Sales and advertising;
11. Transportation and logistics;
12. Accounting and analysis.

All levels of behavior show a direct relationship to technological cluster of major job families. When properly described and taught, these behaviors can serve as a vehicle by which English, math, science, and social science maybe strengthened and/or integrated and reinforced. Students involved in this kind of program would not be denied opportunities in general education while developing and improving upon saleable skills.

Some of the emerging patterns in the field of applied curriculum have shown us a fresh way of approaching and implementing courses that encompass these behavioral stages--a fresh way as regards school practice, if not curriculum theory. I refer to curriculum patterns that go far beyond the simplistic notion that anything "new" seems to bring with it some "improvement" over existing courses--requiring, perhaps, some reorganization of content here and the elimination of a topic there. I refer to curriculum patterns that go beyond the simplistic notion that all can be taken care of in revisions, and once the revisions are put into "textbook" form, then surely they are ready for adoption by every school in the district or county or state. How many teachers can you speak of, who feel little need for experimentation to test basic assumptions and to find alternative ways of correcting current curricular dissatisfaction? How many project staffs do you know of, who have sought to test on a trial-and-error method some rather embryonic assumptions without seriously disturbing the regular school program--at least, not for prolonged periods?

Surely, any really significant application of a given pattern calls for an awareness of the inseparable nature of the major components of curriculum and instruction, and the development of a close relationship between school and project through continued involvement in the daily exercise of teaching and learning.

B. A Set of Alternatives

I would like to suggest two alternative patterns of course development within established time allocations that may help give a truer sense of direction to the job that lies ahead. First, the search for and collation of fundamental elements inherent in different disciplines seems increasingly to point toward methods, processes, and behaviors that may well provide the nucleus for new curricular objectives. Second, the difficulty of extending some courses downward and of establishing their grade placement suggests that the goals of any trade, industrial, and technical program should be differentiated for different levels of employability.

To put the alternatives into another frame of reference, the high school should be advocating exploratory and preparatory programs or courses, leaving the finishing and employment training for the post-high school years. Another way of stating it would be that secondary education should be developing a curriculum which is neither strictly academic in its nature nor vocational in the traditional sense, but one which is permeated with a readiness to work.

In curricular and job analysis terms, readiness to work means:

1. Enabling the student to find out about his abilities and interests and how they fit into the world-of-work;
2. Providing the student with an orientation to careers which, in turn, provide a basis for making occupational decisions when and as they need to be made; and
3. Helping the student acquire basic computational, communicative, and social skills that will enable him to function in society and to attain further specific training in a technical institute, in a junior college, in the armed forces, or in industry.

Further, if the content to be provided establishes a realistic student "goal orientation," whereby the individual may become employable throughout a significant part of his career, then training for either technical, skilled or semi-skilled jobs would not necessarily have to be occupational. It would be education for careers--for unstable and multiple-trial careers.

Therefore, a readiness for work implies the development of programs in which the student can find both motivation and success as stimulants to remain in school longer. Concomitantly, a readiness for work implies the development of programs through which the student can enter the labor market with saleable skills, if he so chooses to terminate his education at the end of high school. In other words, a readiness for work calls for programs which prepare the student both for work and continuing education.

Does this sound like more foliage for the ivy-clad tower? Emphatically, no! I've been associated with two exciting programs now for two-and-one-half years, which exemplify this concept of readiness for work. The course contents of both programs are committed to the same ends and comparable techniques, but stress student goals that differ in kind, rather than in degree.

C. The Pre-Technology Program

The one denotes a polyvalent technical education, specifically, the Pre-Technology Program. The content of this program is designed to correlate conceptual learnings of several disciplines--math, science, and English with experiential activities of a technical nature. These activities are the under-pinnings of entire major job-families, such as engineering, electronics, paramedics, graphics, and power mechanics.

Math is learned as a math course taught by a math teacher in the math department. So, too, is physics and English. But the English teacher, the science teacher, the math teacher, and a "technical laboratory" teacher (who is traditionally referred to as the shop teacher) begin by planning, developing, and building topics, problems, projects, instructional units, and courses of study as a team--as an interdisciplinary teaching team (which should not be confused with the more common conception of team teaching). An interdisciplinary teaching team is concerned with: (1) relating the contents of each member's respective discipline to experimental and developmental activities that are relevant to the student; (2) establishing objectives for each area that relate to every other area; and (3) implementing these course objectives in a technical laboratory setting where each subject area coalesces. Thus, physics becomes experientially oriented; math becomes problem solving; and English becomes communication.

It is in the "tech lab" (to use the jargon of the program) that the student must determine and demonstrate specific conceptual and manipulative requirements. These requirements or performance criteria, in turn, become the standard whereby the student knows empirically to what extent his product, which he has constructed, translates the degree of theory that each discipline possesses. To know this, the student must understand what he is doing and why he is doing it. He must be able to think in terms of mathematical and scientific principles (respectively, algebra through trigonometry and physical or chemical science), to translate these principles into concrete forms, and to communicate about both principles and forms in technical language.

A firm grounding in this kind of generic training should enable the student to solve unfamiliar problems, develop methods of inquiry, and adapt to changing conditions with greater ease than if he were narrowly trained in civil, mechanical, electrical, chemical, and other specific technical fields. This kind of polyvalence requires average and above average academic ability and psychomotor skills. The systematic development of such content for such students is endorsed by Princeton, Harvard, M.I.T., Columbia, Central Michigan University, University of Wisconsin, San Francisco State College, and a host of California junior colleges. There are, at the present time, at least thirty-eight schools in northern California that are experimenting within the broad dimensions of this content; they are all sponsored, supported and serviced by the Center for Technological Education.

In order to encourage and support the institution of such programs, the Center provides the following kinds of services:

1. Consultancy and advisory services of expertise both from within and outside the Center;
2. Pre-service training of aspirant teachers who are completing their fifth year at San Francisco State College. Sixteen young teachers have just completed the training program; we are anticipating forty more trainees for the new Academic Year 1967-1968;
3. In-service training of experienced teachers who are interested in the Center's extension courses, summer session workshops, symposia, and seminars;
4. Sponsorship of Research and Development grants and contracts, acting in the capacity of a consortium;
5. Publication and dissemination of relevant information, proceedings, and instructional materials.

The Center for Technological Education is ultimately directed to the development and demonstration of innovative learning styles, teaching strategies, and curricular organization. The success of this mission may result in a new curricular "track" that would provide a number of options for the individual student upon graduation. This, we believe, would be more realistically suited to our democratic, technologically changing society.

D. A Spin-Off of "Pre-Tech"

The second kind of content denotes a combination of knowledges and skills in the basic subjects of English, mathematics, natural science, and the social sciences. I need not dwell, here, on the importance of communication and computational skills or of related physics and chemistry for occupations other than technical--these have already been sufficiently stressed by advocates of excellence in vocational-occupational education. I do want to emphasize the social sciences also as basic knowledge and skill subjects for semi-skilled and skilled occupations.

There is enough research to corroborate the assertion that the lower the individual is on the occupational ladder, the more often he moves around horizontally without ever climbing the ladder. The pattern of unstable and multiple-trial careers is so common in these two occupational groups that it is especially important for the high school student who is more suited to work at either of these levels to possess a practical understanding of the economics, the sociology, and the psychology of industry and of the trades. For him, a social science of work would entail a matter-of-fact grasp of such topics as:

1. When, what, and how to change jobs;
2. Where to find and how to use resources and data to weigh the different and differing variables of hourly wages, average hours worked per year, seasonality, seasonal alternatives, daily and weekly schedules, and fringe benefits;
3. Occupational trends and ways of recognizing occupational change, career patterns, and places of employment;
4. The use of social security, public assistance, and retraining programs in making the transition from one job to another;
5. Budgeting for seasonal and cyclical unemployment;
6. Advantages and disadvantages of housing, schooling, recreation, and transportation,
7. Physical conditions of work, variety, freedom, and pace of work;
8. The functioning of the labor market, unions, management, and supervision.

These topics should be taught largely in an organized, sequential pattern of work-study programs, field visits, part-time work, and vacation job assignments. These will be done for their own sakes, for training in versatility, and for developing the capacity to change by experiencing change under supervision. Thus, the student will be allowed to consider the knowledge and skills needed in each of his job assignments, the human relations and economics of each situation, and the problems of adapting from job to job.

There is a very exciting model of such content materials being tested in eight high schools surrounding the Greater San Francisco Bay Area. The program which is a spin-off of the original Pre-Tech Program, rings a festive tone even in its title; it is tastefully called Project FEAST (Foods Education and Service Technology). The Project aims at challenging the interest and maintaining the efforts of the future semi-skilled and skilled worker. In many instances, the content is flexible and real for accommodating the ability level and interests of the potential restaurant proprietor and hospitality manager. Dr. Louis Batmale, Dean of Technical-Terminal Programs at City College of San Francisco, has raised the question whether the hotel and restaurant curriculum of City College of

San Francisco might have to be changed eventually, to accommodate the high level of entry knowledge and skill FEAST students bring with them.

The FEAST program also caters to an unusual combination of theory translated into meaningful experiential activities of the hospitality and foods industry through the interdisciplinary teaching team strategy. Each team is composed of a home economics teacher, who very often acts as team leader, a counselor, and lunchroom manager, an English and a business math teacher.

Here again, the team of teachers pool their ideas and correlate their course objectives. Each school adapts the basic operation of interdisciplinary education to the student and community needs.

These, then, are some of the antecedents and potentialities of increased learning productivity within formal learning paradigms in secondary schools. As educators, we are all interested in finding better methodologies, better techniques, and better instructional patterns for the improvement of a total educational program for the world-of-work. Without question, we are entering into a period beyond precedent when educators on all levels of the educational stratum will be forced to become highly discriminatory at combining teaching faculties, materials, and innovations to achieve realistic learning conditions.

E. Criteria for Other Adaptations

The first test of any scheme of curricular revision or organization lies in the relationship between: a. the organizing center being used to involve the student (topic, problem, project, unit), and b. the central concepts and methods (observation, generalization, communication, production) that the student is to learn. The test expects specific answers to such questions as:

1. Is each subject matter of the course a key area in the curriculum?
2. Is the course or program designed to meet the needs of a significant number of students?
3. Is the course or program designed to make the instruction learner centered?
4. Does the course or program offer some unique articulation of media and/or methods?
5. Does the program offer a long-range goal, or, in the case of a single course proposal, does it fit into a long-range program?
6. Does the end result offer maximum transferability and use of self-learning techniques?
7. Are the staff and materials for developing the program available at the institution; if not, can they be obtained for purposes of the experiment?
8. Does the course provide some possibility for evaluating its results and reappraising existing procedures?
9. Can the program get additional financial help from outside sources?
10. Does the program have the approval of the members of the institution's department or division?

11. Does the program require new facilities or can the existing facilities be economically and efficiently used?

12. Can the program integrate unconventional modes of instruction in ways that maintain and even exceed conventional academic standards?

The precise answers to these questions rest with the individual school, school district, and/or county concerned about updating its trade, industrial, and technical curriculum. The degree of specificity and sophistication will dictate the nature, scope, and extent of the instructional courses to be developed.

The operational answer to these questions rests with the proposition of devoting special attention to experiments with different approaches and alternative patterns within new programs or courses. Two or more investigations, committed to the same ends and comparable evaluative techniques as in the case with Pre-Technology and FEAST, should experiment with different means to meet these ends. This type of investigation--whereby the chances of achieving a given end with a given means and, therefore, of comparing the relative effectiveness of alternative means--can effect with some startling results some new dimensions of education and training for a trade, industrial, and technical curriculum.

With that statement, I have made a 360° turn to my original position: The only remaining point to make is that it behooves us to "pert" the proposition, after the fashion of the Project Evaluation and Review Technique (PERT), and totake it in fact, if you haven't already, through its planning phase, its initial development and field testing phases, its experimentation phase, and its implementation and evaluation phases.

DEFINITION OF OBJECTIVES: A STEP IN THE CURRICULUM DEVELOPMENT STRATEGY

T. Antoinette Ryan[*]

For the last two days your attention has been directed to the overall concept of a decision model, a systems approach to curriculum development in vocational education. Today I would like to ask that you focus on three parts of the total curriculum development process, philosophy which undergirds any curriculum effort; objectives which implement a curriculum goal; and decisions which determine curriculum clusters. Dr. Henry Ten Pas, Head of Agricultural Education on this campus, will be with us later this morning to present a point of view concerning the philosophical base of curriculum development. Ideally Dr. Ten Pas should be here to open the session this morning, for philosophy is the source from which educational wisdom must come. It is impossible to develop a curriculum--at least not an effective, quality curriculum--without an explicated philosophy. It is from our philosophy that we are given direction. Curriculum objectives reflect a philosophy--or lack of one. I am going to focus on objectives, asking that you bear in mind relevance of a philosophical base in consideration of the objectives dimension of a curriculum model.

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[*] T. Antoinette Ryan, Institute Director, and Director, Research Coordinating Unit, Oregon State University.

This afternoon, Dr. Gordon McCloskey, Professor of Education at Washington State University, and a long-time leader in the fields of curriculum and vocational education, will be here to share with you some of his thoughts and reports of his experiences in attempting to develop clusters of knowledge and capabilities related with performance of various tasks.

Now, let us turn our attention to the topic of objectives. Before I begin, let me ask that you take a sheet of paper and write an objective. . . . Now, let me share with you four objectives which I found in four different curriculum guides. First, The objective is "developing an appreciable understanding of industry as it is at the present time, realizing its social problems; Second, "cultivating intelligent judgment and appreciation in selection and use of industrial products;" Third, "knowing that industrial arts satisfies the desire to create;" Fourth, "developing the understanding that the world is made up of many peoples who have developed separate and distinct cultures."

Will you hold in abeyance for a time the objective you wrote and the four I have shared with you. Now, will you turn your attention to a consideration of what industry does? You probably will agree that for many years profit-making concerns in business and industry have engaged in product research. The motive for this research, of course, was to increase their revenue. It is well known that infinitely more money is expended by private industry on research each year than is spent for educational research. A significant amount of the investment in industrial research goes not only to discovery of new products, but also to rigorous improvement of existing products. This is the case in business and industry. What is the situation in education?

In education for the most part researchers have not been product researchers. Why does this situation obtain? One reason frequently offered is, "lack of money." This well may be an important factor. However, an equally significant factor is the vagueness with which the products of education are described. When the goals of education are defined as "excellence in education," "quality teaching," "better programs," or "prepared learners," the products are not clearly identified. Industry defines the kinds of improvements that are desired precisely and exactly. A desired improvement in the airplane would not be defined as "a better airplane," but rather as "an increase in seating capacity by at least one hundred fifty seats, without decrease in passenger leg room." The product researcher in industry starts with the big "O" at the top of the decision circle, a clear, operationalized definition of objectives.

Education can do the same as industry. The curriculum builder, in education can implement the role of product researcher. Education is not starting from a vacuum. There is a sound basis for operationalizing definition of objectives in education. The concept of behavioral definition of objectives was basic to the Pressey teaching machine of the 1920's. The efforts of B. F. Skinner and his followers in developing programmed learning focused attention of the importance of defining objectives in behavioral terms.

If curriculum designers are to implement effectively the role of product researcher, it is incumbent upon them to start with the big "O" defining objectives. In education the product researcher must be concerned with systematic improvement of curricular programs and materials. More specifically, he must work with reproducible sequences of instructional events, whether presented to the learner by textual materials, films, audio-tapes, or live teachers. Reproducibility is a key feature of materials developed by the product researcher. Systematic improvement demands trial, revision, trial, revision, eventuating in instructional sequences which can be replicated. The methods of the product researcher are empirical rather than judgmental. This means that in education he must form conclusions regarding efficacy of an instructional program on the basis of pupil performance, not on his intuition. His conclusions need not be supported by rhetoric, but rather by performance related to achievement of behaviorally defined objectives. The curriculum specialist functioning as a product researcher must use more than judgment as a basis for developing curriculum. The practice of using consensus of experts that "this is a good curriculum" will not suffice. If the curriculum developer is to be a product researcher, he can no longer rely solely on a curriculum committee, working diligently year after year, and finally producing a curriculum based on the consensus of the members that "it is a good." Product research demands a priori objectives, defined operationally. It is against the objectives that evaluation of a curriculum can be made. Judgments and intuition cannot implement this function.

The question, then, is "How does the curriculum specialist implement the role of product researcher in an educational setting?" The first step is to find out the parameters of the existing situation. He cannot modify; he cannot create without knowing the base from which he is starting. General Motors cannot improve its automotive line for next year, without first knowing the situation with regard to GM cars this year. So it is in education; the product researcher must take a good hard look at the existing situation. He must determine what it is that makes him feel dissatisfied, uncomfortable about the situation. Are there jobs going unfilled because of unprepared graduates? Are there students whose needs are not being met by the existing educational programs? The educational product researcher, in his role of curriculum designer, must identify that which he would like to change or to improve. Once this is done he is in a position to set the goals which he would like to implement through a contrived curriculum. In determining the general nature of improvement or innovation that he would hope to achieve, the designer probably has identified general aims. It is not admissible to stop at this point, however; a curriculum built on general aims will probably fail to meet specific needs. If the general aim is to meet the needs of culturally disadvantaged youth, the curriculum designer still must know "what needs" in order to decide on components of a contrived educational environment which could be expected to bring about the desired behavioral changes in these youth. A curriculum which is vague and general too often results in vague and diversified outcomes, which may or may not achieve specific objectives, meeting defined needs. To have a reproducable educational package, it is necessary to be able to relate input and output factors. It is important to be able to state with some level of confidence that, given such and such a materials-methods-media mix, under a defined set of conditions, it can be expected that such and such outcomes will be produced.

The crux of the matter, then is the task of defining objectives? The key to the task is to define in behavioral terms the objectives which implement general aims; to specify terminal behaviors you would hope to have take place, as a result of something you plan to do. The performance behaviors can be identified at three points in time--immediate; intermediate; and long term. What are the performance behaviors at the end of the curriculum? at a long-term future time, when the learners are in different situations, in their occupational roles, performing in occupational areas? and midway between the immediate and long term? It is necessary to define specifically the anticipated behaviors and desired performance level which should obtain at these points in time, relating to the curriculum intervention. Performances not related to the curriculum are not to be considered items of concern. The designer must not fall into the trap of becoming overly concerned about performances or situational factors or issues not related to the curriculum. His interest should be in the direction of product and purpose--curriculum outcomes and objectives--and the relationships between these two.

What is the operational procedure for identifying and organizing objectives? First, know the factors and conditions combining to create an educational-related problem. Second, decide what situation would exist, if the problem were to be solved. Third, find out as much as possible about the variables involved. Fourth, define objectives, the achievement of which can be expected to alleviate the problem situation. Finally, check the objectives to see if in fact they are behaviorally defined. This final check can be made by what I call "The SPAMO Test." This is a five-fold test to determine if objectives meet criteria for specificity, pertinence, attainability, measurability, and, finally, if they are outcomes.

First, are the objectives specific? Are they stated in vague, general terms? In the outline of a teacher preparation program, one of the objectives was stated as, "improving the image of vocational education." This is a worthy purpose, but fails in achieving specificity of behavioral objectives. What is meant by good? What is an image? If I were to ask each of you, "What does good image of vocational education mean?" I probably would get fifteen different answers. One way to test for specificity of a stated objective is to ask several people what the statement means to them.

Are the objectives pertinent? It is possible to have worthwhile objectives, stated with a high degree of specificity, and yet, not be pertinent to the situation. To determine whether or not an objective is pertinent, ask if it is related to the situation with which you are concerned. Does it implement primary aims of the curriculum? If the outcomes defined in the stated objective were to be forthcoming, would the problem be alleviated to some extent? If the problem were failing to meet needs of culturally disadvantaged youth, and one facet of this problem was identified as the inability of these youth to comprehend printed materials above the third grade level, an appropriate objective might be "for the youth to be able to read, with understanding of the meanings of the printed material, at fifth grade level." Attainment of this outcome would be related to the situation, The objective would be pertinent.

Are the objectives attainable? This means "do not reach too high in the sky;" at the same time, do not "give up the ship without a fight." An objective must be within reasonable reach. There should be some feeling of confidence that, all things being equal, the objective could be achieved. To expect the disadvantaged youth, reading below third grade level, to improve their comprehension level to collegé level in a two-week period, would not be realistic. The chances of attaining this outcome, on the basis of available research data, would seem highly improbable. On the other hand, an objective should not be discarded too easily. The product researcher must not be afraid to face a little opposition. He must be prepared to come to grips with realities of power groups, perennial lack of resources, omniscient fear of change. Essentially, determining if a set of objectives is attainable means deciding if it is realistic and practical to expect to achieve the outcomes--within confines and limits of the situation and setting.

Are the objectives measurable? Do the objectives describe terminal behaviors which can be quantified? The degree of precision which must be reached in measuring depends on the situation. However, there should be evidence to suggest that the desired precision could be achieved; that measuring devices or instruments could be found. There are different levels of measuring. Sometimes when I bake a cake, I measure precisely, using a graduated measuring cup and set of measuring spoons. Other times, I look and guess. This suggests that there is some leeway in determining precision of measurement. The degree of exactness is a function of the situation. It is a question of deciding just how important it is to have exact data concerning the product. At any event the objectives must specify something measurable. It is not sufficient to say, "The objective is for the student to read." What is meant by reading? Does this mean having students look at words on a page and turn the page, or does it mean turning pages at a certain rate, or does it mean understanding meaning of printed symbols? Whether objectives are cognitive outcomes, affective outcomes, or psychomotor outcomes--the curriculum designer should have at hand some indication that the extent to which desired outcomes are achieved can be determined. This means he must know, at the outset, that he will be able to measure, directly or indirectly, the learner behaviors relating to the objective.

Finally, are the objectives, in fact, outcomes? The last check is to ask if the statement of objectives describes outcomes. Are these the terminal behaviors which are to be expected when the desired goal has been reached? Have the criteria of acceptable performance been identified?

When I began my remarks this morning I asked you to write an objective, and I shared with you four objectives taken from education guides. Let me ask you now, would these objectives meet the SPAMO test?

In summary, the statement of objectives is the description of desired outcomes, that you hope will eventuate from the contrived environment constituted by the curriculum. Deciding on appropriate objectives to implement basic aims is a scientific and demanding task for the product researcher. This calls for a high level of decision-making. Deciding on objectives demands bringing to bear at the decision-point as much information and expertise as possible. It is not an easy task. It is fun--but frustrating, and there are rewards. Just as in industry there are dividends from product research, so, too, in education there are rewards. The advantage deriving from starting with behaviorally defined objectives are realized in the ease with which it is possible to design scope and sequence, to determine pacing and mixes, to combine resources and research data; and finally, to produce educational outcomes contributing to the well-being of individual and society. In implementing the role of product researcher, vocational education, the curriculum designer not only will be drawing up specifications for the desired terminal behaviors relating to attainment of basic aims, but he also will be able to gather information to answer the question, "Did the desired changes come about at an acceptable performance level?" He will be able to determine the extent to which terminal performance behaviors relate to the curriculum package. As product researchers, the curriculum designers can demonstrate whether or not a given curriculum package is viable; whether or not a particular instructional organization, a specific materials-media-mix can be expected to accomplish a set of objectives. The curriculum designer can develop reproducable packages, extending the educational horizon beyond the confines of a localized approach. Testable curriculum packages can be reproduced in thirty different localities. A package produced in Hawaii might be adapted for use in Alaska.

The decision model for curriculum design starts with a broad base, reflecting a defined philosophy implemented in appropriate objectives. The curriculum designer is a product researcher. A key to effective, efficient product research is in behavioral definition of objectives.

PHILOSOPHY: A BASE FOR CURRICULUM DESIGN

Henry A. Ten Pas*

Thank you, Dr. Ryan. I did not know such an exciting life could sound so good. I am not sure that I want to be here. First of all we welcome you to the campus and until a few minutes ago I looked forward to being with you. Then I heard that Gordon McCloskey was around. This is quite an honor to be included in that kind of company, because Gordon McCloskey, as far as I am concerned, is one of the giants in the field of human relations and public relations. I do not suppose anyone realizes more than I the presumptiveness of my putting the professional record on the block and appearing before vocational educators such as you and trying to talk about the heart of the matter. I do not think anybody recognizes this any more than I and when you say, "He is presumptive," I have to agree with you. I could not agree more with Dr. Ryan. I will have to preface this. Melvin Barlow gave a very fine presentation to our leadership seminar and I have his rationale here. He wrote a very long rationale on the area of which I am going to talk to you about. He prefaces his remarks with remarks that all of our principles and our objectives and all of our organization and administration of which we have part of, even Hawaii, which is lacking right now in some instances, and all of our detailed experiences have to have a base. He says "We have not worked that out very well." He adds there has to be a core, whatever you want to call it; there has to be a core which we will call philosophy.

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Now that philosophy term bothers me a little and it probably bothers the rest of you too but I want to try and talk about a core of values. Dr. Ryan talked about a core of values which may be possible for us to build. This is one we have not paid too much attention to, I am afraid. I have not paid too much attention to it; maybe you have. As a group, we have been so busy fighting legislation and enjoying it; fighting one another and reveling in it; dragging our problems before everybody else and defending them; I am not sure we have had a lot of time or taken much time. I see some of the old students here and you may leave if you want to; and I see a lot of old friends that can leave, and you may leave. If you are not all friends of mine by the time you leave, invite me back and I will try again.

Now basically this core that I want to talk about has three major things that we are trying to do. One, we are trying to ask the most important questions that ought to be asked about life. Call that what you want to; I call it philosophy. The most important things that are fundamental to life have at least three questions which we will come to later. Secondly, there are three or more questions that we have to ask about education and I will come to those. It seems to me that too often we have assumed that that is somebody else's job. It seems to me that it is time that we have grown up in this occupational age when we no longer worry about training, education, technical, vocation, and so forth. Third, three or more questions that we ought to be asking about occupations. The only two reasons I have for being here is one, I have lived a long while; and two, I have a big family and either of these can be reproduced.

I want to start with one of the things that I think is the most significant piece of literature that I can bring to you and I know many of you know it, the Bible, not the usual one, Gibran. Maybe you disagree with this. Then we can identify our disagreements, but I am going to read this and then I am going to say, "What questions do we have to ask about this?" That will be the first set of three questions.

Kahlil Gibran says:

> Then a ploughman said, Speak to us of Work.
> And he answered, saying:
> You work that you may keep pace with the earth and the soul of the earth.
> For to be idle is to become a stranger unto the seasons, and to step out of life's procession, that marches in majesty and proud submission towards the infinite.
>
> When you work you are a flute through whose heart the whispering of the hours turns to music.
> Which of you would be a reed, dumb and silent, when all else sings together in unison?
>
> Always you have been told that work is a curse and labour a misfortune.
> But I say to you then when you work you fulfill a part of earth's furthest dream, assigned to you when that dream was born,

And in keeping yourself with labour you are in truth loving life,
And to love life through labour is to be intimate with life's most inmost secret.
But if you in your pain call birth an affliction and the support of the flesh a curse written upon your brow shall wash away that which is written.

You have been told also that life is darkness, and in your weariness you echo what was said by the weary.
And I say that life is indeed darkness save when there is urge,
And all urge is blind save when there is knowledge,
And all knowledge is vain save when there is work,
and all work is empty save when there is love;
And when you work with love you bind yourself to yourself, and to one another, and to God.

And what is it to work with love?
It is to weave the cloth with threads drawn from your heart, even as if your beloved were to swell in that house.
It is to sow seeds with tenderness and reap the harvest with joy, even as if your beloved were to eat the fruit.
It is to charge all things you fashion with a breath of your own spirit.
And to know that all the blessed dead are standing about you and watching.

Often have I heard you say, as if speaking in sleep, "He who works in marble, and finds the shape of his own soul in the stone, is nobler than he who ploughs the soil.
And he who seizes the rainbow to lay it on a cloth in the likeness of man, is more than he who makes the sandals for our feet.
But I say, not in sleep but in the overwakefulness of noontide, that the wind speaks not more sweetly to the giant oaks than to the least of all the blades of grass;
And he alone is great who turns the voice of the wind into a song made sweeter by his own loving.

Work is love made visible.
And if you cannot work with love but only with distaste, it is better that you should leave your work and sit at the gate of the temple and take alms of those who work with job.
For if you bake bread with indifference, you bake a bitter bread that feeds but half man's hunger.
And if you grude the crushing of the grapes, your grude distils a poison in the wine.
And if you sing though as angels, and love not the singing, you muffle man's ears to the voices of the day and the voices of the night.

The thing that frightens me is that work no longer identifies man. So there are three questions I would have you ask about life or about philosophy, which I call it. It is a simple matter; we just have to ask questions in philosophy. The answers are harder. The questions are quite easy.

One, what is really real to life, what is really real? Two, what is really worth knowing and true? Three, what is good and beautiful? Those are the content, those are the areas, the content, onotology, epistemology, and axiology (I do not care if you do not have that) of philosophy.

Philosophy then becomes a search, a wisdom, a seeking out, an urge, a destiny to try to find the answers to those questions, what is real, what is true and valid, and what is good. Some of you by your own lives and by the lives of others and by the kind of exploration you are going to be doing can help people. I hope you do not help them by giving them the answers. I hope you live the answers.

When we get to education and educational objectives, they are founded upon three other questions. One, what is education, how do you define it, is it a product or process? Two, what ought it to be? Here is where we get into the guts of philosophy, philosophy is concerned with what ought it to be? Now that we have done this, the third question, by what means can what we ought to do be accomplished? That concerns the whole area of philosophy of education, which many of you struggled through in a course or two and never came to grips with it or come to grips with every day depending on the qualities of your lives and that of the teacher.

When we get to vocational or occupational education we have three more questions, over-simplified they are, how, what and why. More complicated they become, "What is work? How is the individual made man by work, not how does work make man a productive man in society, that is another question, and three, why education? So the three questions sophisticated-wise are still what, how and why. But I would put it this way, One, what is work? Two, how is the individual made man by work? Three, why educate to work?

Now it seems to me, I hope I am wrong, I spent more of my time I am afriad, trying to distinguish and differentiate between general and vocational education than I have to answering these questions and it is a fruitless task. Because if I had been a magician, I could have seen that when you use the term education, you modify it with the word vocational, technical or occupational not eliminate it. But it seems that we are still engaged in that kind of thing whether or not college education is more important. College education for what? I suggest that all you folks can cry all you want to and repeat all we want to in this group with me about how unimportant college education is, while you still wear your ties and your glasses and your white shirts and your degrees and you will have a hard time convincing anybody. You live one! Why don't you say that I am biased for college education because that is how I got my status. If I show up for registration at the college without a tie and coat on, someone asks what is wrong with me, and the only answer that I can give is "That I have got my status." I do not need it any more. Now I need friendship! I am quite sure the urge is greater for one than the other; maybe I can get both. Let us quit kidding ourselves, every parent in America has so much faith in education that they believe it conceivable for that youngster to become more productive, meaningful and have a better life. And the more they get of it the more they believe they will be productive, meaningful and moral. Tain't true, we know, but that is a professional secret. Why don't we live the productive, meaningful citizen life? So I suggest that, what is education? Aren't we still really fighting about whether or not the professional person works or not? In all of our legislation if you go to college you are not eligible to any other funds. You shouldn't be, you have already received pretty much of a free trip. Get a little more though. For those who are interested in morality, we have a little bit of an internship in vocational education that we are sponsoring for next year and we will take applications.

When you put all of this into what we call a democracy, which we are not, we are a republic, aren't we? We are representing democracy at best, aren't we? And sometimes we even question representation, don't we? Or ourselves? The philosophical basis of a democracy are two fold: One, that every person has worth and dignity and it was decided in 1642 that if they had worth and dignity and lived in a democracy, they were entitled to an education according to their potentiality. I suggest in 300 years we have already gotten over the argument about that. We ought to talk about, "By what means can this be done?" not by "whether it is justified or not."

That term justified is a large part of my vocational curriculum and I wish that I could get rid of it and I encourage you to make the same attempt. Justified, what we normally mean is, "Can we modify this proposal so it can be funded." That is immoral. I want to make it crystal clear, it is immoral! Amoral at best. It has nothing to do with philosophy. Philosophy deals with what you ought to do.

You know, I know, God gave us the courage, he gave us the urge. There is not any question, but what, many many times it is easier to go ahead and get a fifty-one percent vote than to do what is right. But to equate those is wrong! Now, when you can stand and tell me truthfully that you do not know what to do, what is right, I will say there is no hope, not today. We know we haven't the guts and the gumption to go ahead and do what is right. I grant you, and work, I think helps, some kinds of work! Cream and scum both rise through work. I learned that agriculturally long ago. It is wrong for you to say, "Because you work, you only get cream and no scum."

The second basic assumption is, that every man if informed, not propaganda, if informed, will govern himself for the welfare of all. On these two assumptions hangs the philosophic base of democracy. I have a sheet here that gives you the source of our educational objectives. May I suggest that there is a little booklet put out by the Dean of Washington State University called, "The Imperatives in Education." It is as good a preparation I could suggest, I will not review it for you at this point. The source of our educational objectives is quite clear; the how to reach them is not quite as clear.

I noted last night that if I had to sum it all up there are some key words which we have to center around in order to find the means whereby to do what we ought to do. I do not have the answers, because then I would not be a philosopher. The urge, the search and the thrill of the chase of life is guaranteed to everyone. There is no easy way. The only thing you need to do to appreciate your present state of life is to consider the alternatives. If you want to chose something else, you have got that right. I am choosing this moment and so long as I can, life, hopefully, challenging life, but I am not guaranteed that in any poker game. I am not going to complain if they throw all the people at me that have not found a challenging life and it is my role in life to try to find some challenge in that with all the problems that go with it, you ought to thank the Lord that you have been able to, that somebody has been able to reach some of these people.

Last night, Larry came up to me, he is a handicapped lad. I do not know, someone brought him up to me, I suppose because he wanted him to meet someone of his kind, mentally and physically we get along well. I say in all honesty that we did. He said, "Mr. Ten Pas, I was in your class six years ago. I am eighteen years old now and I just graduated from high school in Corvallis. As I walked across the stage and got a diploma I was worried about how I would get it being lefthanded. Since that time, I have scouted this town three times over, every single business I can think of, looking for work, any kind of work because when I don't work, I get into trouble. My brother is a little younger than I, but I hope that he finds work before I do, even though I'm most anxious to, because he's two years younger than I and he's never worked and Mother is concerned and she said to come to talk to you."

Well, I am not a very good counselor under those circumstances because my first priority is to six people that I have to teach to work so I do not have to work so hard, and I haven't succeeded. But we had two and a half minutes, which is about average counseling time given for any school, and I said "Larry, let's visit." He taught me a lot. He taught me a lot, by asking me some questions. And when he left he thanked me and I should have thanked him. He is not handicapped! His handicap lies in the same kind of handicap that all of us are, that we are not all the men we would like to be, or women, we would like to be. Our aspirations are greater than our realizations and may they ever be so. There is no greater sin than not to see standards which are set for ourselves! These are the key words that I see, if I have to sum it up just for now. If you are going to develop a philosophy in vocational education may I plead with you to consider these words in it in trying to find the answers. I do not have the answers! I will accept my money under false pretenses, whatever I might receive, because I do not, but I can raise these questions, what is the purpose of occupational education, that is, a philosophical question. If it is to match men with jobs, I know of a more noble purpose, if you are pawns for the economic structure so that you can cut down the unemployment rate, may I suggest to you that the present economics could not function unless we had two and one-half percent unemployment. There would not be any competition for the jobs and they cannot stand that and I am part of the system and like it because I am not communistic. We precariously fluctuate between a three and a half and a four and a half unemployment for a healthy economy. Anytime that it gets out of those bounds we are in trouble. The purpose of vocational education as all education is to have a person realize his potential, without propaganda, whatever that may be. That may mean you counsel them out as well as in, that is one man's opinion worth only that.

Two, diversity, diversity has to be a key word. It is the one thing that has kept us from making vocational education too traditional, too set, too patterned. It is the one thing that has allowed the federal government or the states or the local districts or the areas or anything else to be diverse and for that diverseness you will pay with proposals and you will be writing proposals until you are blue in the face; I hope proposals with great diversity, which will become funded and unfunded on the creativity and imagination of the people doing the instruction and that is as it should be. That is as it ought! Uncle Sam not withstanding, LBJ not withstanding, thirty million dollars in research not withstanding, I know it, and that is one man's opinion and if you know it shut up about some of the other things!

Our oldest boy had his birthday the other day, and his mother was very intent upon giving all the seven children a party for his twenty-second anniversary. We were settled around the table, and he said, "Dad, why is there so much poor teaching?" He and I have had a man to man relationship that I thoroughly enjoy. I never realized I could get the thrill of this as well as the others. I am not entitled to it. I started to tell him and he said, "I'll tell you." He told me for quite awhile, Bill also told me for awhile and then Lynn got into the act because she is a college student and is being taught to be critical. Sue is getting ready for college next year so she had a few well chosen words about the teaching profession and what is going on. John said, "Hold it a minute, Dad, tell us, will you?" I started to tell them and he started telling me again. His Mother was glaring at me from the across the table because she could see a storm brewing and this was a beautiful party and was not to be spoiled. The fourth time he said, "Dad, what can we do about it?" I said, "Will you shut up for awhile?" He said "Yes." I said, "All the time you have been talking, I have been thinking and that gives me an edge on you. Are you going into teaching?" He said, Me? Going into teaching? I should say not, I am going to be a doctor." I said, "Keep you mouth shut then." He said "Dad, touche', your point's well taken." His Mother said, "Here I had a nice party . . ." and he said, "Mother don't get excited, I asked for it. If I am not willing to devote my efforts to improving the field, why do I sit here and criticize it?"

I am proud of him. Unity is not contrary to diversity and all we are asking you to do in the various fields is unify. I suggest to you that there is greater strength around this table because of the several subject fields, several service areas and you will even add more when you add the experts on the field, that kind of unification is absolutely essential. So that we do not talk about general versus technical versus occupational versus vocational. I am not talking about banning together on something that is bad. I am talking about banning together on some of the things that we ought to do and we know we ought to do. Our epistemology is way ahead of our axiology.

Four, I do not know of any culture that can be perpetuated without biological reproduction. I do not know of any culture that can be perpetuated including the democratic culture with instruction in democracy. I am ashamed when I have people say to me that the boys in Viet Nam should not be there. On our twenty-fifth wedding anniversary the other Sunday, one of the boys said, "We have no business being in Viet Nam." and I said, "I am going to take you on." I should have been listening, Tony Meeker, who just returned from Viet Nam said, "Please, Henry, let him talk. That is why we were there." I suggest that we have to have lessons like that every day in the classroom.

Service is another key word. Somehow we have gotten the dignified idea that if we serve people, we are not educating them. I suggest that it still takes a felt need and an irration and I do not know of anything one enjoys more than being served. There is a good place in vocational education to serve them where they claim they have the need. I know these educators know a lot more than most people do, but the kids are theirs. Do we change that? All the kids are ours. Let's service them. I am talking about the kids and even they know when they say they have a need.

And last of all I would add to that, six, work, work, work, work! I have to share this with you. Henry Van Dyke said,

Let me do my work from day to day
  In a field or forest, at the desk or loom,
  In roaring market-place or tranquil room;
Let me but find it in my heart to say,
When vagrant wishes beckon me astray,
  "This is my work; my blessing not my doom;
  Of all who live, I am the one by whom
This work can be done in the right way."

Then shall I see it not too great, nor small,
  To suit my spirit and to prove my powers;
  Then shall I cheerful greet the labouring hours,
And cheerful turn, when the long shadows fall
At eventide, to play and love and rest
Because I know for me my work is best!

KNOWLEDGE CLUSTERS IN VOCATIONAL EDUCATION CURRICULA

Gordon McCloskey*

Thank you. It occurred to me, "You had not better be too sure of yourself in there, McCloskey, because you are with a bunch of pretty sophisticated old hands; maybe the best thing for you to do is to be exploratory; and don't 'dish out' too many preordained prescriptions about the final answers to vocational education." Tentatively, as far as I am concerned, I would like to approach anything that I might contribute here in that spirit. I am an old Pennsylvania farm boy who spent quite a bit of time in the coal mines and on a construction crew and with that down to earth background, even a few college courses never made me too sure of myself.

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As we look at the problem, that we around this table and our fellow educators in the culture and economy in which we function are working on, obviously getting schools organized and other parts of the culture organized to do the best that is possible to help our kids acquire capabilities to enable them to work well in the occupations that are likely to exist is a big task. Anyone who says that he knows how to do it is either a fool or a liar.

I hope that we all have ideas and I hope that we all get more ideas but that is the only way that I can honestly approach it. Let us look at a few things. We have had some vocational education programs in our high schools, community colleges, trade schools, technical institutes for a long time. A lot of you people here are engaged in that sort of work; I have been engaged partly in that sort of work. In every state of this country we have state departments responsible for carrying on some sort of a program which is, in the judgment of the state and national people, making some kind of contribution. A lot of you people right here are engaged in helping those state departments do the best they can. Some of you work in the large city schools and then some of us sit up in the ivory towers, the university, and give advice. All of us together know the thing that we have been doing at this time is not considered adequate. If it were considered adequate we would not be here and the Congress of the United States and many state legislatures would not be trying to provide funds and more manpower to do better. What are some of the things which we confront when we try to do better? The only view that I can take of vocational education is the view I take about education in general. Education is supposed to help people develop their capabilities; it is supposed to help people become what they can become. Some of us say there are certain aspects of this thing that can help people develop all sorts of specialized or interrelated capabilities. We vocational educators say that one of our special jobs is to help those kids acquire the kind of capabilities that enable them to work effectively in the kinds of occupations that are open in this kind of world. It is important that we say we are going to try to help them to acquire the capabilities they need to operate well in the kind of occupational world they are going to live in. We may change that occupational world a little but that is a big job and we educators cannot change that world all alone. The technologists, the industrial administrators, the statesman, will all contribute to the nature of the world. The best thing to do is to say what can we do along with the other sectors of society to help these kids acquire skills that will actually help them work well in the kind of world that they are going to have to get along in. It is a little more than that; it certainly involves us, giving honest consideration to all of the problems that are involved in making those opportunities for acquiring those capabilities accessible to the kids.

First we certainly need to take a good close look at what are the capabilities; maybe those are the objectives that you talked about this morning. What are the capabilities that these kids need? We need to take a real hard look at this. I will say more about that in a few minutes. What are the social, political relationships that are going to affect our ability to do what we know is best for these kids. If any of you are working in a local school system, and a lot of you are, or are in technical institutes, state departments of vocational education, you know that we have already certain organizations that have grown out of past experiences and you know as well as I do that those organizations do not change easily. You know that there are a lot of people who have views of their own about the way the school system ought to be organized, about what the curriculum ought to be, about the process in which you are going to change it. Now part of our job is going to be to help people understand what it is that we are trying to do. I would be the first one to say to you, "I do not know how it is all going to get done. Let us put our heads together and see some of the ideas that are likely to be helpful and test them with each other and see how they would work in particular places, see how they might have to be changed to work somewhere else, see which ones seem to be pretty good for some persons or some which are not good at all."

Now I am going to talk about this whole process, of how intelligent people might go about determining, "What are the capabilities that will help kids become employable in the modern world."

We have been working on a project for two years and are beginning to nibble away at this problem. A couple of other dimensions, when we started out we had a number of ideas. Around the country there were some other institutions that also had some ideas about vocational education research, but they could not find very many interested in what we call clusters of knowledge and of capabilities. Finally the U. S. O. E. said to us, "Well, why don't you specialize in studying the cluster problem?" That was intriguing to us. We said, "Let's go," and we did. One of the first things we had to do was find out what cluster meant--cluster of what, for what? I presume that all of you know that there have been various efforts for the past two-thousand years to get groupings of ideas, groupings of capabilities to enable people to do something that they think desirable. The idea of clusters is not new. In vocational education right now you can find people saying, "Well there are families of occupations." There are some families of occupations in the business world. Some people have conceptualized families of occupations in power mechanics. Several people have conceptualized clusters of building trade occupations. These are occupations that seem to be related. It is relatively easy for a person to perform various kinds of tasks within these cluster occupations, therefore, it seems reasonable to some people that if you find out what the relationships in these closely related occupations are, that you could find a common body of knowledge, a common knowledge of capabilities that would help individuals get along in those areas.

We approached it a little differently. We said all the evidence that we can get is that even in these families of occupations the actual tasks performed are changing very rapidly due to technology. This is certainly true in the office occupations area. This is certainly true in the construction occupations. This is certainly true in the health-service occupations. This is certainly true in the power mechanics and electronics service occupations. The actual tasks performed within those occupations are changing quite rapidly; and, therefore, the kind of knowledge and the kind of capabilities people need to perform that task is changing very rapidly. We said let us go out and make a fresh examination of the kind of tasks people are actually doing in some of these major occupational areas. We took ten building trades, office occupations, retail occupations, some agricultural occupations, child care occupations and food service occupations. We said, let us do three things, let us find the tasks that people are performing on a modern construction job. There is no use in going back to an outdated job because that job is not going to be there when these kids are out of school. Go out and see what ten leading craftsmen, carpenters, planters, electrical workers are actually doing. What kinds of materials and tools are they using, what kind of skills are they using. Then let us see what kind of knowledges, skills and emotional capabilities are needed for the expected performances of those tasks. Let us design some kind of way that you can decode this and put it on IBM cards and see if we can come up with some definitions of the knowledges and capabilities which are common and those that are not common.

It seems to be a sensible hypothesis that you are likely to find quite a few common elements for instance in mathematics, science and communications. It is also important to say there are a lot that are not common. It seems to me that we need to get a definition of these capabilities and then use that as a partial basis for curriculum planning and instructional materials development. I would like to read our definition of clusters for you. The overall goal of our clusters research is to identify combinations of knowledge and capabilities most likely to maximize career-long occupational opportunity competence and choice in a revolving technological society. Somehow educators have the idea that there are two classes of kids, one, nice, neat, college bound and the other, not so neat non-college bound. As a vocational educator and a free citizen, I protest. How do you know that my kid isn't college bound? Who decided? You! I am not saying he should or should not go to college but I would like to know how did you decide so quickly that he isn't college bound. The first thing that I want to know as a free citizen is what is his occupational competence, in what, for how long. This kid is going to live a lifetime, and I know and you know, that he is going to live that lifetime in a very rapidly changing occupational world. You want a cluster of knowledges and of capabilities that will prepare him for an entry job. Are you going to have him stop there or have him thrown out the first time a technological development comes along? I am not going to settle for that.

Getting those kids into entry jobs is one of the most critical things in our society and, therefore, one of the first obligations of vocational educators, but it is only a first obligation. I just went to a hamburger place and I saw quite a few kids at work there. I think it is fine; I wish my kid had that opportunity for this summer. But, I want to know this, are vocational educators going to settle for preparing them for that and then leave them there? In our clusters concept we said, "No, we will not settle for that!" That is one part of it, opportunity for entry but also career-long development.

We also said, opportunity and competence. Obviously the first thing you have to have is an opportunity. I know you vocational educators cannot give him the opportunity. I know other sectors of society have to do that but you could help get him ready so that he would be ready to take advantage of whatever opportunities the rest of society can offer him. That is part of your job, that is the competence part of your job. The other thing is, in a highly changing society and in a free society, any kid has a right to move and he has a right not to be trapped and he has a right not to be unemployed when technology tosses his job out the window. In a world where technology is giving a greater and greater diversity of choice, any kid is entering an occupational world with greater diversity of occupational possibilities than any society in history. That diversity will become compounded within the next ten years. Our kids have the right to clusters of knowledge and capabilities that prepare him to make enlightened choices. I am not going to settle for any vocational education clusters that trap a kid in one spot, an entry spot, or even one vocation for the rest of his life. Because increasingly as more diversity is coming, society keeps people moving from one job to another. If they do not move, God help the society, God help the economy. Society itself needs mobility.

Certainly the individual in a free society has a right to move and I say that vocational educators have a responsibility to maximize freedom of choice; otherwise technology can be a great big enslaving mechanism and 1984 talked about some of this. That is the philosophical base on which we proceeded as we set about developing clusters.

What kind of cluster do you want to find? This depends on how you want to program your computer. You can find any kind of cluster. That is the reason I spent time defining a philosophical base of human rights. The question gets to be, what do you want. We studied about one hundred leading electronic firms and got the clusters of knowledge essentially used in the performance of major types of work done by electronic technicians. This is the kind of thing you can do and is worth doing, at least it shows for various types of tasks they do the knowledges they need to know to do the task. But, do not forget, this technology will soon be outmoded. You have to keep up-to-date.

It happens here is a growing number of child care centers. A lot of day child care centers are being set up for the migrant workers, we have always had day centers for some kids. This is growing, but not nearly fast enough. I would like to remind the vocational educators that the biggest single occupation in the world is taking care of kids. There is no occupation in which so many people are employed and there is no occupation in which the knowledge of the workers pays off so big in terms of human development and human well being as in child care. If we can get twenty cents from the federal government and twenty cents of somebody's time to give a little attention to this, we can accomplish something. I am going to keep on struggling for this.

You can do some other things. You can say that we worked within a school system. We presently work in the framework of departments of disciplines and subject matter fields. One could say, "What are the clusters of knowledge and capabilities that could fit into various subject matters that are related to the performance of a major task?" Let us take mathematics for awhile. We have a number of mathematicians who are familiar with the newer math and we came up with a diagram of eighteen areas in which you can organize mathematics which you can be sure will be used occupationally. We are working on the development of instructional materials in each of the boxes on the chart. You can obviously do the same thing with science, the question of all sorts of measurements, all sorts of temperatures. You could conceptualize occupational mathematics or occupational science. All the studies made indicate that you can very easily conceptualize clusters of communications capabilities. Most of the studies that have been made in the recent years indicate need for improving communication skills. Disadvantaged kids and graduates from universities have extreme difficulty with communication. I do, too. I wrote a book about communication, but I still have difficulty. Studies show cases where persons in the so-called disadvantaged [illegible]up do not even get by an interview. They couldn't get an entry job in anything but the most menial areas because they did not know middle class language well enough to get past an interview. I am not asking you to make everybody middle class; I mean make them capable of conversing, listening, discussing and trading ideas. Most of disadvantaged kids are very low in these capabilities and that is the reason that they either do not progress or they get fired.

If you want to go up the ladder just a little bit farther, if you want to be in any supervisory job, you certainly need a lot of oral and writing communication capabilities. These are common to every one of the occupations. This is a kind of way to cluster. We thought it useful to try to find to what degree there are common elements, and to what degree other kinds of things are needed to provide instructional materials which will help these kids acquire basic capabilities. If you are going to have concepts of common elements there are questions to answer. Where are you going to put them in the curriculum? Where are you going to put them in the vocational programs? Are you going to have any of them in the general education program? Are you going to have some of them in a little bit of both? If so, how are they going to be interrelated? These are important questions, I do not know the answers.

DEVELOPING A JOB CLUSTER APPROACH TO VOCATIONAL EDUCATION

William G. Loomis*

Dr. Ryan, lady, and gentlemen. You know after the introduction that Dr. Ryan gives, you are fortunate if you can stand up and be recognized and sit right back down. I particularly feel that this is so when you take a group of people, as highly selected as you folks are, from across the country, that have had the opportunity for two or three days to find some commonality about the things you think, and then put someone before you like Dale and myself, to stick our necks out and talk about something that even in itself is controversial.

Dale and I had a quick conference this morning after he came over and sat in with you yesterday afternoon and the vote was whether we should come over or not. So here we go. I will tell you I would like to take Dr. Ryan around the country with me for introductions. Again, I say that if I just had to stand and say, I am an expert away from home, but when she says this kind of introduction in my own backyard, and we have got people like Wec Rumbaugh and Jim Lacy sitting in your group, they know darn well this is not true. Now my real credentials, and I hope you people will not give me away for being part of a real flexible program in the state of Oregon.

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There is a little clipping from the May 2, 1967, Tuesday, Pittsburgh Post Gazette, I was attending a meeting back there on this date and it's a picture of, I am not sure whether a go-go girl or a strip-teaser, but she is in Portland she is called the queen of the tassles. She is thirty-two years of age. It indicates that she is enrolled in a course in data processing because she feels soon that at her age, she will be stepping to a second job. I want you to know that we are right on top of the changing job needs in the state. We took quite a bit of ribbing in Pittsburgh and I did not admit that she is probably enrolled in a private school and not in a public institution.

It is really my assignment, if I can do it within twenty or twenty-five minutes, to wander around for a little minute and to set the stage for our job clustering approach. I feel that since you have consented to come to Oregon and we are in this contained situation on the campus that you might wish to have a little background on what we are doing in vocational education. Dale and I kind of feel to set the stage we will give you some inkling or implication of what we are doing or what we hope we will be able to do, in this area of clustering and curriculum development at the high school and post secondary level. I have got the generalities this morning and Dale has the specifics so I hope the second hour of the time which we have scheduled is that allyour contemptuous feeling about this whole business of clustering and our approach to it, you see will be aimed at Dale and not me. I think a central theme or challenge that we felt in the state in the last few years in the State of Oregon, has been to come to some approach, both at the state level, and at the local level, to what we call a manageable and attainable set of objectives. We look at it in one dimension in terms of employment opportunities, human resources, and the educational facilities, and we look at it in another dimension in terms of the elementary, and of the junior high level, high school level and the post secondary level which is in our state primarily the community college level. The course that has manageable and obtainable objectives in this computerized age, we must feel that we have got to get the data on human resources, manpower and even on educational facilities to the point where we can do some computer punching and come up with some data that will be useful, state level, local level, area and otherwise.

Frank Temple said three or four years ago when he was still commissioner, I am sure that you have probably read it, but "We've come a full circle in vocational education." After it had dwelled in what he called limbo for a decade or better, it is now fashionable. Well, fashionable or not, and I don't know whether we have doubled and lost sight of our objectives in the process, but we still have with us, I think having been in state staff position for a couple of decades, more questions, more issues, and problems, many of which are unsolved and look pretty unsolvable at times. I am just going to run down through four or five of what I think are some of these harder questions. And they intermingle between issues and/or problems. You can label them as you like and I am sure that you can add ten or fifteen more, but these keep coming up with us, at least some of the tougher ones. Where within the economy and within the occupational structure are the jobs and certainly with reference to curriculum. Secondly, what are the entry jobs for youth and what are the age limitations placed on them, if there are job limitations? What are the implications to the curriculum builders? Thirdly, is apprenticeship or formalized job training, a bridge between school and work, or is it a barrier between youth, and kids, and jobs? When should work experience be used? When should work experience be used, when should it be available at what age levels? I am sure that you all have opinions about it. Fourthly, how does the technological revolution affect the educational and training requirements? What are the implications to curriculum development? Let me add my parenthetical item here, look in the old Dictionary of Occupational Titles constructed in the 1940's, look at the ones now, I would challenge you to find a baker's dozen complete new jobs, sure there's more proliferation of jobs, there's an up-grading and a higher competency required, and a few new jobs, but completely new jobs. My point being that a good many of the so-called new jobs are growing out of the old ones; a lot of the work that is now going on with some new connotations to it. Lastly or fifth, where should occupational education be offered? In special schools? In the mainstream of public education? or where else? and what are the implications to curriculum development?

Now let me switch to what I think we refer to in Oregon, what is the environment or setting for our type of program, and again, I hope I am not insulting your intelligence, all I am trying to do is to indicate that we recognize, I hope we recognize some of these things that we are taking some of our approaches in vocational education in Oregon. These are some of the trends of the times that I have summarized in one brief paragraph, phrase by phrase. Increasing urbanization, increasing leisure time. Margaret Mead in one of these little bulletins that the Labor Department has been coming out with recently summarizing seminars talks about the oceans of leisure time and islands of work which will be before us. Continual technological change and more automation, certainly there are implications to the work force. With the greater involvement of government and the trend toward larger political units, local control is jeopardized. Certainly we see it and we feel it in Oregon. Ten years ago we had eight hundred and some school districts and now we are shooting at two hundred. But this is the educational scheme of things and there are other implications besides of the governmental units, international developments and I will leave that one to you, under-developed countries and our role as one of the affluent societies and lo, the revolt of the minority group calls for revolution in values. I took a course, and one of the last things I did down on campus, I wrote a paper on values, and my prof suggested that I had better not do it, and he was one of the more astute ones on the campus, he said you'll just get yourself in trouble trying to do it, but this whole business of values is a real challenge.

Finally, this momentous increase in knowledge and certainly it affects us in occupational education and related general education programs. Now I have got five pet things that I would like to pick out of the 1963 Vocational Education Act, that I think have a real impact and a real implication on where we are going and where we can go in vocational education.

The reason I refer to it as the Vocational Education Act is, to me the study and background that went into it, the Panel of Consultants and the congressional hearings, the Vocational Education Act is just a sign of the times in our field. But here to me are five things that I think are real significant as you look at the structure of vocational education through the country. First, literally all the restrictive and quantitative requirements of the old Smith Hughes and the former laws in vocational education acts have been eliminated. Quantitative requirements and procedural requirements, some, but if there are any hourly wage requirements in the state plans of the states, they are primarily there because you put them in the state level, you put them there because the federal act required it.

Secondly, any educational agency, school district, community college, in the State of Oregon, that has a program being worthy of being called vocational education, could qualify under the new state plan for vocational education, the one that came in with the '63 Act. Thirdly, the federal funds allocated to the states are not earmarked for traditional programs as they were prior to 1963, each state must make a decision. I agree if you go to reporting it, you have twice the reporting problem now days, we report not only by industrial, ag, home ec, and so on but we also report by five or six purposes, but really as far as the allocation of funds within the state, it is primarily the state's responsibility and some times we don't like this because we can't pass the buck to Uncle Sam. Fourth, vocational education must be planned and made available for all types of people in all parts of the state, and this really is a sleeper in the federal legislation. When the State Department or State Board of Education accepts the premises of the '63 Act, they are saying that they are going to use judgment, data and information that they haven't had to have before to decide whether they are going to put a dollar in this center or two in this other, or fifty-thousand dollars for research or development, because all people in all parts of the state are entitled to some type of service according to the federal act. Fifthly, the '63 Act provides for involvement of the various disciplines. Dale and I driving over were trying to decide on discipline, intellectuals, and so on, and who represented which, but really the opportunity to involve sociologists, economists, psychologists, I don't know if we have any anthropologist working with us at the present time, I hope we have, and also the opportunity to use any reasonable amount of this money within the state that comes within the so-called 4(a) classification, that in addition to the amount that you can get out of the 4(c) grants at the federal level, calls for us to take a look at ourselves and to bring some people in to help us.

Well, so much for what I think are five real implications to the Act, particularly as it is adopted in all fifty states. My notes tell me that I am at the point in the time, now where I ought to spend five or ten minutes lying and bragging about some specific things that we are doing in the State of Oregon. What I have done so far is to set the stage, I hope, for as we see, the challenge of occupational education in our state at this point in time. Just before the '63 Act was adopted, we had quite a development in our state using Title 8 funds under the NDEA program to develop technican training programs. We developed four or five curriculum guides, as we call them, using industrial people, professional engineers, and other professional people. Then we developed three in the non-technical level, and we got these developed just at the point in time, and these were primarily for post-high school programs, when our community college programs were just beginning. Well today, and we have back slid a little bit in the last two or three years because we have taken on more assignments than we can handle, and we have let these guides become somewhat outdated and the federal office carried through from the hang over of the Title 8 technical program got out some bulletins so we have been able to lean some on these. But as a result of this kind of assistance, the community colleges tend to have a common sequence of math at the technical education level, a common sequence math for skill level program, a common sequence of science at the technical level, applied science, physics, chemistry; and also a sequence with all the individuality that is needed at the local level in some of the general education courses. We have been writing on our guide in this area and the reason I mentioned it, is because it is the first item we have been doing. I think it pointed up to us and we were told and have been told, by our co-workers in the community colleges, that this gives them a running start and that this gives them the opportunity to do some things that they needed to be doing at the local level rather than rediscovering something in each of these areas at the local level.

Then the other items that I am going to talk about, really to do the same kind of thing in different ways, with these different additional projects. We got one of the first 4 (c) grants during the first six months, thanks to Dr. Ryan's assistance, and we have what we call a proposed program for planning, implementing, and evaluating vocational education, a computerized data bank approach with clustering occupations and using standardized instruments. We would like to give you about a fifteen minute over-view of this next project. This is our long-range so-called sophisticated approach. It has been so darn long-ranged and sophisticated that we haven't been able to get out of phase one into phase two, but we are right at that point now. This is one project that is hopefully tying into the computerized approach to looking at manageable and attainable data. This is just one of the projects I wanted to mention.

About a year and a half ago as we began to fumble the ball a bit, and maybe we have all along, that this business of how you approach secondary schools and how do they relate to post high school programs in looking tat the total program of vocational education. We spent some time in getting out a small guide, and believe me, there was an awful lot of give and take in our department, and then with some local advisory meetings with some local schools, we came out with this little guide which now being incorporated into a larger one that Dale will talk about a little bit later. This gets at some of the statistical limitations of running vocational programs in small schools, look at the statewide implications, for instance, out of 220 high schools in the state, as we began to manipulate the data, our chiefs tell us not to manipulate the data, and be careful how you massage it, but there are 220 high schools in the state, seventy of the 220 represent seventy-five percent of the kids, and friends from New York where I read literature on some of your problems, you have the same problems. What do you do? We have to add a little bit of this here and we are building it in to some of our other materials. This has curriculum implications.

During the last two and a half years, perhaps from three points of view, we have been looking at the manpower, human resources and educational facilities that we need in vocational education. The first has been what we call area study of need. I believe that we draw a lot better picture in the last year or two in our sophistication approach to them. For the two and a half years we have said that they ought to get really three things and perhaps four. First of all to look at the employment opportunities statewise, regional wise and nationwise. Secondly we should look at the human resources, in this instance, normally the high school pupulation and also the post-high school population. Thirdly, what are the educational facilities, what is the status of the educational facilities in the area. And, fourthly, what should they ought to do about the first three, if anything. And, of course, the fourth one is the one you end up on with your follow-up studies for two or three years.

We have twenty-seven out of the thirty-six counties that are covered with this type of study. Some of them have been countywide, some two or three counties, some less than a county, some have been real worthwhile and the last few, because we have set up a model approach, thanks to the assistance of the Research Coordinating Unit, and so on, so instead of gathering a lot of data, that is really useless and some of our volumptious reports were probably the most useless, because they gathered a lot of information that really didn't apply to the problem. This is one area, another dimension of this has been the close working relationship with the State Department of Employment, and they have covered eighty-five percent of the work for us in skill surveys and projected employment opportunities in our state. We were fortunate. I know you folks who come from states where this has not been done, and most have done it, and you don't have this kind of data of occupations to use. But, we also know the limitations of the skill surveys and the employment service. At the national level with Dr. Allen in the MDTA area appeared before the state board in Kentucky a month ago and just literally said that we had to get away from these skill surveys and that we had to get into something just a little bit more sophisticated. Not that skill surveys aren't helpful but it is that there isn't enough for our entire point of views. We have taken this data and projected for a decade ahead both employment implications and we are really sticking the employment's neck out when we add to it a distribution of high school and community college graduates by occupational areas and so on, which we have done. So we have projected to go with these local area studies, projected needs for vocational education at the high school and post high school level. I will tell you a little bit more about this next week. Thirdly, we find occupational areas that do not lend themselves to either the skill surveys very well or really any other kind of research that is now available as far as developing educational needs. Take the civil aviation area, what is the need for air frame and the powerplant mechanics, and ground crews andrelated areas for the State of Oregon, the Northwest, and so on? What are the real implications in the food service areas? So if you begin to take it statewide, we are developing what we call on a pilot basis, in these two areas, one of these is just about complete and the other one we are about to get into, resource manuals, one for extension publication, another that backs up our thinner one, that has more detailed data and a third one that will probably be a brochure for consumption by high school and community college potential students. These three areas certainly have curriculum implications.

Another project that we are working on that often gets referred to in Oregon is PEP, Personalized Education Program, aimed at helping to get both at the cause and treating some of the symptoms of dropouts and near dropouts at the high school level. I told Dale that the only thing I wanted to do on the talent show aspects of this was to try to impress you that this telephone book size bulletin that we started with here about a year and a half ago with our college in the Portland area, and others throughout the state is an approach, cross-mingling it with youngsters from metropolitan and rural areas. But some of this provides an approach to twenty-four youngsters that are either dropouts or sit-ins or near dropouts. We have got two additions to this green folder since, and we have got some parts of it hopefully funded and other parts, that we are proposing. This is built around the need for individualized instructional material, curriculum implications and procedures in which to use them. When we get tired of working with the regular student there is the real challenge that we are working on the pilot program on the side.

Another area that we feel is an absolute must and I know all of you are concerned with is vocational education either at the high school level or at the community college level frustrated by the lack of information that the kids have about employment opportunities. Of course, we do not know what they are so, how are we to pass it along to the kids, but we have some of our staff, particularly, the section dealing with guidance that developed this bulletin this year, that we will be piloting this fall in three or four schools, with some of our seed money, and we are looking with an eager eye to grants totaling $30 million for exploratory programs. Really a lot of things in here are pulled from our friends in North Carolina and otherwise, and I suppose Wec and Jim who are Oregonians, I hope can say, that we have learned some information from their experiences so hopefully we are going to improve at the junior high school level, preferably, self-understanding through occupational exploration, and this we think are just the fundamentals.

We have another project and have spent a year developing instruments for self-evaluation of programs locally. Even trying in hopefully a little cost benefits implications. And I have piloted these instruments in three schools so far at the high school level, and we are at the point where we are going to complete the post-high school or the community college level self-evaluation material.

Another project that we are interested in is a statewide leadership program that we feel has real implications to curriculum development and utilization. We brought in what we call the old timer, for some forty-five hours; and then we are in the middle of forty hours of time with so called middle timers and we are launching an internship and long range program this summer. This fall we will have hopefully at least ten interns in intern centers that will get experience that is hard to come by in short of ten or twelve years otherwise. Hopefully we can put some of it in one year. And then comes long-range planning for seminars following up with the oldtimers and otherwise, and we have had a lot of fun so far in this area. The last item that I want to mention is pulling together some of the information that I have talked about piecemeal here into an overall guide, part of it, but more particularly, our kind of overall master plan, our guide to Structure and Articulation of Occupational Education programs, Dale will give it to you in slow motion, seventh grade through post high school. The cluster concept is involved. I think I have wandered through this enough and we hope we get through here in an hour so we can benefit from some discussion time with you people.

I would like to say just one more thing. I am impressed at the brainpower and experience that is here in this workshop. We are deeply grateful to get you to this state. I am most pleased to know that Mr. Doherty, who to me is Mr. Research in the Portland School System, is spending this time with you. I don't care whether he does a thing but listen to this because he is in such a key spot in Portland that I know it will be helpful for all of us just to have him here. I know that we in Oregon are going to get more out of this because we had to prepare for it. Now let me add one little twist to this cluster business. You see I am verystrong in this belief, and I think that both our state people and a good number of people are on the firing line at the local level believe this, that if you believe totally in trying to rifle shoot a specific occupation, if you stop to think that in decades there has been proliferation of the splintering of what's been called master occupations in the past, which really was a cluster, if you believe that we ought to be rifle shooting, if you get in a post high school program and talk about a licensed practical nurse program, you are not going to cluster. You are going to train for a licensed practical nurse. If you have done a followup, take a program that has been a rifle-shooting program at the high school or post high school level, and start a two, three, four, or five year student followup, and you will start rationalizing about what a related occupation is.

Dale will now talk to you about the specifics of the cluster concept. It has been a real pleasure for me to be before you and I want to assure you that we are tickled to have you people in Oregon. We've even arranged the weather so you are seeing the typical western side of Oregon in the process. Thank you very much.

DEVELOPING A JOB CLUSTER APPROACH TO VOCATIONAL EDUCATION

Dale Pinckney*

I don't know how it struck you, but as Bill talked about the various things that we are doing, I was counting some of them, and when he got to the end, I thought when he was talking about oceans of leisure and islands of work, I think as far as I am concerned, he has the two things mixed up. As you probably noticed, I sneaked in yesterday and listened in here a minute. Being here today makes me feel like I did many many years ago, and believe me this was years ago. There was this little gal where I happened to be at that time, and rumor had it that this gal was a pretty warm number, and I wanted to get a date with this girl and I finally somehow contrived to get it, and I got her out, and to tell you the truth I was glad to be there, but I was so scared, and that's about the way I feel about being here, because I did hear you people yesterday.

Now the topic we have, I would like to caution you about two things. In the first place, I have worked so close to this, I suppose that I have either come to believe in it or at any rate, I am told that when I talk about it, I sound positive. Believe me, I am not that positive, so that is the first word of caution. And finally, the kind of topic this is reminds me a little bit of the mideastern potentate who had three wise men who solved all his troubles for him, and he came up with a magnificent problem one day. This problem was that his son who loved bread and jam was forever dropping his bread and it would land jam side down, always. And the potentate called his three wise men in and asked why is this and how can it be solved? The three wise men withdrew to consider this magnificent problem and they concluded something as follows: that if they did give the solution and it didn't work, that was it, the end of the line, and they didn't dare take this chance, consequently, they had to find some way to pass the thing on, and if they blamed the potentate they were dead. So they went back to the potentate and reported this, "Your son jams his bread on the wrong side." I think these are enough words of caution, and I hope that you get the idea that I am nowhere near as confident as it appears. Bill did mention and I am glad he did, that it is a little bit hard to confine myself simply to the cluster concept and the cluster techniques in what I have to present this afternoon.

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It is simply a greater topic than that. To cluster occupations simply for the sake of clustering is certainly foolish. To build curriculum upon clusters, one must have some kind of philosophical base, certainly there must be some notion about the philosophy of education or some principles involved to lead you to even go through this thing and attempt to finally build curricula out of clusters. Therefore, the topic is bigger than just clustering but I will try to get through what we have done here in the time that I have here. The topic is much more complex than that, and as I have said to my boss, so frequently that I know he must be sick of it, "It does little good to say we live in a time of extreme complexity, and then say let's make it simple." And again as I said, simplicity and complexity are still antonyms. Now he and I were talking not too long ago, and I casually mentioned to him the magnitude of the task I think vocational educators have undertaken. The implications of the new act that Bill has spoken of, the dynamics of our culture, of our society, as it is structured today, and the share of the load that has been handed these people or that they received is frightening. This is a tremendous task, now what we have been doing, has been pretty well boiled down or encompassed in this monster, and we have brought all we can spare of these along with us.

We have a Guide to Structure and Articulation of Occupational Education Programs and certainly that title ought to be changed. At any rate, it allows us to identify it in its preliminary stages, the title tells people something that we are trying to do. Now later on we can certainly change the title and simplify it, but at this point, we felt it necessary to identify the task with the manual. Now we have been able to bring ten of these along, which we will leave up here, and if you people wish to use these as resource materials for the remainder of your institute, ten will be available, that is all we could spare at this moment.

Now I would like to turn to clustering, but to do that, I have to turn to the Guide somewhat, because the Guide includes within it a brief history of what we have done. It includes the clusters we have identified; it includes tentative curriculums for each of the clusters that we did identify. And so you will be able to see it and you will be able to see some of the historical perspective of our process here. Now there is naturally, as I said earlier, some things that lie behind it. And the first few comments I will make in the first few minutes would, I suppose, border upon philosophy although they are not strictly philosophy. What I really will be talking about is the objectives of the Guide, a statement of what leads us in this direction, and then I'll turn to the clustering itself. One of the things that undergird this guide has been put very well by Marvin Feldman. I am sure many of you know him. He said this, "If there is one thing that we have learned in recent years, it is that today's students are career-oriented; they look to the schools to supply them with education that will enable them to participate within and contribute to our work-directed society. Their motivation to learn depends heavily on convincing and continuing evidence that this is the kind of education they are receiving." This lies within this guide; it is reflected from what we have developed here.

The Guide is designed to do four things. Here I suppose it would be very easy to say, your reach probably exceeds your grasp, because these are ambitious. These are the four. I'll preface that with this, the Guide is intended to suggest approaches to the problems involved in providing meaningful occupational education available to all students throughout the junior high and the secondary school structure. Now you will notice that the first one says all students. It is not the intention of this development, to limit it to the problem student. It is not intended as we vision it here, for the lower or in-trouble group, it is not even to exclude those who are a hard core college bound group of people. On the contrary we feel that it has great use to offer them, and should be available to make its offer. Number two, opportunities for students to achieve entry level employment competency while in the secondary education complex, now let's pause there a moment. If I caught the gist properly yesterday, there seems to be some quarrel with the level of entry competency. Now, I'm not certain if I understand the quarrel, and I won't try to analyze the reasons for it, but to me as I think of it, and I think probably how you think of it, although I'm not sure of it, to achieve entry level competency for kids who are going to see no more schooling after high school, would be a tremendous achievement. This is the way it strikes me, and I realize it now, that what was said really was that we don't prepare for entry level competency, why do we want to prepare for a career. I agree, but you must begin somewhere. Moreover, what good does it do us, to say we will front-load an occupational education student, a vocational education student, with career knowledge, and we turn right around and say a few minutes later that we can't even front-load our five year engineering college students so that they are front-loaded for a career. Now, perhaps, I am wrong, but it seems to me that this is an inconsistency, the likelihood itseems to me is that we probably can't front-load any one all the way. I think I caught at least a tide of judgment here in just the short time I was here, that continuing education and continuous education and re-training was very much in the picture. Well, then if this is true, why arewe so reluctant to say, and bluntly I will repeat it, provide opportunities for students to achieve entry level employment competency while in the secondary education complex. So that's number two. You see, I'm very positive.

Number three, occupational education which is appropriate to the objectives of students who will continue their education beyond the high school. That is the third thing we want to provide. Ambitious, perhaps it is even impossible, but we seek not to close doors, and say, "Alright, at the eleventh grade, you pop into a vocational education program, you are in a vocational education program for a couple of years, and then bingo that's it." Number three seeks to leave these doors open as much as possible.

And fourth, and here, of course, we get to the cluster idea, number four is to provide occupational education at the secondary level, which is neither narrowly restrictive or excessively specialized.

So those are the four, and these are the four approaches we sought to get at in here. Now, how successfully we've done so is entirely another matter. Now in the Guide itself we identified four directions that we thought were either new to Oregon or represented a new approach in Oregon and these four I will go through very quickly and I suggest to you that they're in the document, and for my purposes this afternoon, number one is the most important.

These four directions then are contained here, the first, the development of curriculums for grades eleven and twelve which are centered upon the concept of occupational clusters; so here we get to all kinds of our kind of cluster. Now this second one will lead you to ask the question quite logically, why grade seven? Because that is where we get control. Why seven, why not three, why not kindergarten. Why did we chose seven? No reason except that is about all my poor mind could grasp, seven through twelve or seven through fourteen really, because, we are thinking about articulating at the post secondary level. Well, seven through twelve and articulating at thirteen and fourteen, is just about as bigan order than I can take a hold of. But there is no reason why we should say seven. It is manageable, or at least more manageable, even that is not totally manageable.

And so number two is the attainment of articulation of occupational education from grades seven through twelve and into post- high school education. That's a big order. I needn't point out to you the implications there, general education and vocational education. How do they integrate, and that leads me to number three.

Number three, greatly increased integration of occupationally oriented education, guidance, and counseling and the academic discipline, so called academic disciplines.

Number four needn't detain us too long, because of the fact that it is in here, as a device to be explored in order to serve areas of low population density and all number four involves is an exploration of the area facility idea. Cooperative functioning among educational units in order to provide comprehensive programs. So those are the four we saw.

Now I heard a definition of a cluster yesterday. It was all right, but we have ours, and naturally ours is better. I told you I would sound positive. To me and the people that I have worked so closely with in this project, when you talk about a cluster, you are not yet really talking about a curriculum you're not talking about anything, except there is a cluster of occupations, and we've been clustering occupations, oh, who knows how long. We cluster them according to how dangerous are they. Insurance companies are fond of doing this. We cluster them according to the male or female employees, we cluster them in all kinds of ways. So it seems to me when you are talking about clustering, you have to get pretty precise about your wording, and probably a little stiff-necked about it. Now I'm going to read this definition that we developed, and it has nothing to do about a career, you'll notice, not a thing, and as I read this, I would urge you to write it down on paper. It is in here, for whatever it is worth.

Here's the one that we developed, an occupational cluster concept simply holds that occupations may be classified into logically related groups on the basis of authentic, identical or singular elements or characteristics. Now to me, that is all there is. I don't see how you can say an occupational cluster is anything else. But then we get to the point of what you are using it for, and that leads me to the next point.

If the concept is to be utilized in planning occupational education, the identical or similar elements that may make occupations into clusters of occupations must be located among skills and knowledges necessary for workers to perform effectively in the jobs found in our economy, all right, that is the educational cluster, but there could be thousands of other clusters.

Hence, as we use it, a cluster of occupations is composed of recognized occupations which are logically related because they include identical or similar teachable skills and knowledge requirements. Now, whether that is a career or an entry level means nothing as I see it. That's a cluster. The problem of putting it together and into entry level competency or putting it together into career long competency is a problem for the curriculum builder, not the person who identifies clusters. Good Lord, I suppose we could get a group of clusters under the heading, Illegal and Sinful, and they probably wouldn't let us build a curriculum for it. Well, that's the cluster concept as we see it now. If the definition seems fairly simple, even if you reject it or if you accept it wholeheartedly, you haven't simplified your task a great deal, because the simple fact about occupations as we have found them to be, and we have explored this as Dr. Loomis has suggested, from the very sophisticated point of view where you are going to put it on computers through a rather involved technique working from the Dictionary of Occupational Titles down to the system, if you can call it that, that I'm going to describe here very quickly which is really a very pragmatic, a very subjective approach.

This statement which I again take from the Guide, I think, describes the real situation about occupations in our work society, "The spectrum of occupations and the variations of occupations which makes up the occupational structure of the United States and of Oregon is so broad, complex and subtle that it presently defies analysis and classification through purely objective mathematical or machine systems. Despite a number of intensive efforts no simple objective or machine formula has yet been devised to solve the problem of solving clustering occupations for the development of occupational education programs." Now we have tried, and we have worked hard at it. This doesn't mean necessarily, to me at least, that you throw out the cluster concept. Now I sometimes wonder if we're going to get to the point and say, "Well, we're sure that is so, but we haven't figured out a way to stick it on a computer, so it ain't legal to believe it."

This is to tell you how we got these clusters, what they are, and how we got them. Now you are going to be, I am sure, disappointed not at the amount of work we have done, but at the simplicity of the approach. The approach that we have taken to develop these clusters might best be described as subjective to some extent, elastic in that we used every method that we could think of and every source of information that we could think of and fallible, because it is completely subject to human error. We did this simply because we think that the cluster has enough to offer to make it worthwhile to plunge ahead with the job, even though you may not be objectively certain about what you're doing. Consequently we would expect this neither to be permanent or totally satisfying as you people look at it. Well, as I understand it, the work started about two years ago, and there was an enormous amount of work done by various contractors with respect to analyzing occupations. There were identified in Oregon some 115 occupations that constituted the bulk of labor force, these were analyzed by a special group of Department of Employment labor analysts. They were broken out into components of worker function. They were weighed in the time and importance of the functions involved. These people didn't develop a satisfactory set of clusters but they did develop an enormous amount of work related to job analysis. And this work was available. Now we simply took this work, plus the Department of Employment's areas surveys, plus the Dictionary of Occupational Titles and any other document that we could find, and we turned three, what we thought, knowledgable people loose on it, and we are ashamed of them, you can see that because we have labeled them "A" "B" "C". I'm "B." These people working from these data made no doubt what they thought were twelve clusters. Now they did it on their analysis of the material from the Department of Employment information, the DOT. They simply went about twelve clusters. Now they actually got fourteen. One of these however, didn't qualify and the other was too diversified. They developed one cluster that wasn't included because it was simply a service cluster. And these things are all over the map. There is a large number of people here, tremendous number, and certainly something needs to be here, but it is just spread all over. So it was recommended that further study go into this. Now the other one was not included because it fell short in numbers, now here is that simple numerical act used by those people. We simply took occupations, I and Mr. A and Mr. C and we would include occupations where there was at least ten thousand people employed in Oregon and a need for two thousand by 1970. This included both replacement and expansion factor. Now I will show you those that we developed, and as I show you these, I want you to think of these in terms of even cluster names. There are the 12. They are colored to show you some that are related. A listing of these clusters that we are currently working with is included in the yellow guide which will be available to you as resource information. These are in the Guide. Now having identified these clusters tentatively, they were submitted with all of the supporting data to selected individuals in the State Education Department and a few individuals in the education field. No we didn't at this point take it out to the area of business and industry. These people then examined these to see if they would buy what we had done. To make it as short as possible there was a consensus that the clusters were acceptable; there was not complete agreement that they were absolutely right. There was argument about these clusters. I would expect there to be. We're not sure they're right but they represented a step to utilize the cluster concept. I should perhaps interject at this point, we are now at the process of developing curriculum guides, we call them resource manuals, for each one. And the people who are developing these are primarily resource people drawn from the industry represented in the cluster, and these are the people who do the work. Now once we've done this, these things remain to be accomplished if we were going to turn these into curriculum, the first was to analyze the key occupations. This was done by assigned people who are hired. They worked for us. We assign them to the job, or we hire them. These people analyzed the operations to separate out the skills and knowledges and duties that were required completely ignoring courses, thinking not at all in terms of courses, but simply say this is what these people need to know, this is what they do, these are the things they need to have knowledge about. Then we turn to the curricular elements which was to identify each of these which of these could be organized into course work. Some of these needless to say were omitted; they didn't lend themselves to this. Third organize them into course and curriculum and fourth, action from business, industry and labor. Now we've altered this just a little bit, what we have done, is instead, is move people in industry, business and labor right into the development of the more refined curriculum. The curriculums that you will find suggested in here are tentative; these are not done through the resource manual approach. That is now being accomplished. An example of the analysis is shown here. If we took the auto mechanic from our mechanical and repair cluster, then this is the kind of thing that is developed. Now this is cut short. These are examples only of what was done, the kind of duties that were performed, these are only samples. The kinds of knowledges and skills identified are shown. These lists are tremendously long, and then we put them into elements as it is shown here. Then finally of course, courses and curriculum.

Now I had hoped to go into a few of the problems and the assumptions that would govern the implementations of such an operation as this. However, time won't permit it. You will find some assumptions with respect to implementing these things in here and they may be of interest to you as resource material. At any rate, it will give you a notion of what we saw, and what is now being refined. That leads us at curriculums, it leads us at courses, and I think the ideal thing here is to stop and say this, "We don't contend in any way that this is the last word on clustering, all we say is that is one approach to clustering without waiting for highly technical development of computerized curriculum development. It is certainly a pragmatic approach, it is realistic, I think that in the time that is left, I have not realistically left you enough time to take pragmatic potshots at either Bill or me.

USING EMPLOYMENT DATA IN PLANNING VOCATIONAL EDUCATION CURRICULA

Bruce McKinlay*

I thought it would be quite useful to consider some of the general problems that you have to straighten out in your mind before you start working with data. In the time I have been professionally concerned with this topic, I have developed a number of opinions even if I haven't developed much understanding about the problems of trying to relate vocational education to the labor market.

I am sure I do not need to talk to you people about the value of vocational education; you are obviously committed to it yourself. But I do want to say, from the other side of the coin, looking at the labor side of the vocational problem, it does seem to me that career-oriented education is probably the greatest gap in our educational system. I think there is some real urgency about getting with the task of putting together occupational training programs, particularly in the public school system, because a large number of young people, war babies as we call them, are rapidly moving on into the high school and on either into the post high schools that do exist or into the labor market. I can tell you very frankly that those moving into the labor market are having a tough time of it because of a couple of trends. One reason is, of course, the competition produced by the very large numbers of people who are within this very difficult age group in the labor market. They are competing with each other without preparation for jobs that are not as readily available as they wish they were.

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Before we get into the what and the how of using occupational information, let us look first at why this kind of information is relevant to vocational education, what do you mean by vocational education, and by the same token the kind of information that is relevant to that education. It is a pragmatic kind of reference of occupational information since the Vocational Education Act requires it. If you want some of that federal money you have got to say something about labor market demands. It is also fair to note that there is a very real difference between justification that you put on a program proposal and decision-making. The kinds of questions that I get as a labor market person are for figures which can justify a program already decided on rather than asking the question, "Is this an occupation in which we should train or isn't it?" If all you are looking for is justification, it's easy to put together some combination of numbers and words that are going to satisfy the federal review teams. On the other hand, if you are concerned with the decision-making process that makes this particular curriculum relate well to job opportunities that may exist or may exist in the future, then you have more and tougher questions to answer. What was the reason that Congress wrote in this rather difficult requirement? It seems that the relevance is not extremely obvious, and I would like to raise three arguments that I hear very frequently, from the public school system that relate to "just how relevant is this business about using labor market statistics?" In fact, some of the arguments really go to the heart of vocational education itself.

Number 1. Does it make any sense to try to train for jobs? One of these arguments is that things are changing so fast these days you really can't predict what jobs are going to be available five years hence, or even two years hence.

Number 2. The world is just moving so rapidly that we can't measure or adequately describe it or predict.

Number 3. A variation of this theme is that automation will have all our jobs in a few years and so there is not much point in talking about training people for employment. The conclusion is that you ought to train them for recreation, fishing or pass around some of these techniques. It seems to me from the work that I have had the opportunity of doing, that this is a rather close over-simplification. There is no question but what the world as a whole is changing, the labor market itself is changing, probably faster than it has changed in the past. But I do not want to be one to admit that we are not competent to get some grasp of what is going on, that we are not able to swing with the punches, if not control them. It is totally within the realm of practicality to talk about in some sense, not only describing and predicting what the engineers are going to do for us in terms of jobs, but in fact having something to say about the decision-making process that permits these kinds of changes. At any rate, it is not at all impossible to describe and predict the kinds of directions in which jobs are changing.

Probably the fastest changing field of any is that of data processing. Yet, we are able to take a look at trends in data processing and predict with reasonable success the kinds of impact that machines that are going to be introduced will have on the job, for instance, of key punch operator. We have at least arrived at some consensus between educators, people from the data processing industry, and labor market analysts regarding what this impact is going to be. If you can handle it in that kind of field there is no question but that you can handle it in most other fields that are larger and thus less capable of changing quickly, and in fact, are not changing as fast. The recent commission on Technological Innovation and its Impact on the American Economy concluded that with regard to a job it takes something like seven years for industry to translate a technological innovation into common practice. There is a lag between the engineering, height of perfection, equipment, and its actual common use in industry. Of course, that is a seven year lag period which no doubt has been reduced from ten, maybe twenty, sometime ago. At any rate, it is still taking something like seven years for industry to make the kind of adjustment to introduce new equipment across the industry. There seems to be some feeling that voc ational education needs at maximum two to three year lag time. Even if they are getting started only when the technology is being introduced, they are still in business long before the mass of the industry, if it is a manufacturing industry for instance, has adopted the new techniques. I do not think it is at all impossible from a research point of view to describe and predict in general terms the kinds of changes that are going to be developed. Secondly, and this is where your specialities come into particular play, to be able to do something about it, in terms of a vocational choice. That is the first prediction. My comment on it is that it is really an over simplification to say that we cannot predict and cannot do anything about it.

The second argument deals with vocational education, the way in which you approach the whole subject, but it particularly relates to the relevance of occupational information. That is the argument that you hear from many top executives in business, too, that most of the people that are unemployed are so due to bad work habits, and they do not know enough to come to work at 8:00 in the morning, or they are not going to come to check in, or to do all the kinds of things that most of us take for granted, that these same people have some personality problem, some problem of work attitude, or work habits, that regardless of their skill, makes them unacceptable in a business organization. The obvious conclusion from that is, concentrating your training on personal adjustment, counseling, the kind of adaptive process that makes these people the kind of person an employer would want to hire whether or not they have the particular technical skills. I happen to feel very strongly that that is an absolutely essential ingredient because it is certain that technical skills alone can not make people employable. But on the other hand, it is necessary for most of us in most occupations to learn the tricks of the trade, to learn how to use the tools of this particular occupation. Simply being a nice guy, a very likeable sort, who is reliable and all that sort of thing probably will not do the job for you in most occupations. Especially when you are talking about young people who are just gettting started. I think that people in the 35 to 45 years of age range can make rather radical changes in occupations moving from one type to a rather radically different type and get away with it, because they have developed an extremely high level of this personal kind of skill. In terms of the kind of persons you are going to be producing for the labor market, young, with some training and very little if any experience, they need the advantage of both these assets, both the personal employability kind of training and the technical.

The third argument is that to prepare people for jobs in the school system, is really a sellout to the business community. It is the school's responsibility, this argument goes, to look after the best interests of the student not simply to prepare them for the undesirable kinds of menial jobs that industry wants people for. Again I would have to say that that is a bit of an over simplification, but I think that it implies a very narrow view of human aptitudes and interests and capacities and inclinations to change. It is a mistake to think that there is a single right job for any individual. I do not think jobs are made in heaven anymore than I think marriages are made in heaven. I am sure I could demonstrate empirically that a large number of people can and do function effectively in a number of different occupations in their work career and the reasons for change may be many, including some internal reasons, change of interest, a change of ability or physical capacity. It is a mistake to think that for any given individual there is a right job and he ought to be allowed to prepare for that job whether anyone wants to hire him when he gets through or not. Self interest on the part of a person considering his work career would dictate that he consider jobs where the need is the greatest within his span of interests and aptitudes. There are undoubtedly several types of jobs in which there is a great need and several, undoubtedly, where there is very little. It is those with the greatest needs where the opportunities for steady work are, where the opportunities for advancement are, and where the opportunities for providing a needed service are. All of these are important to a person in choosing a career. The unfortunate thing is to view vocational education as a sellout to the business community.

I believe that vocational education has one major advantage in the terms of the science of social service that most educational programs do not. There is agreat deal about vocational education that can be measured in contrast to the situation that revolves around most liberal arts programs. With regard to most general education, liberal arts, English and the social sciences, it is very difficult to get any semi-concrete appraisal of what the need is for this kind of an education program. Why do we teach the courses we teach in these programs? I do not know; I guess because we always have. With regard to vocational education we can go a long way in defining the needs. We can be fairly precise about the kinds of occupations in which there are needs and secondly, the kinds of skills that need to be learned for these various occupations. There is the tremendous tool of follow-up which can be a tremendous asset in appraising the effectiveness of these programs. In the connection we have had with vocational education through the Manpower Development Training Act follow-up studies have been a tremendous asset both in employment service deciding and in defining selection standards for trainees and to the vocational schools in writing curriculum content and finding out what parts of the training program did some good, and which didn't; which need to be strengthened and which don't. We have a tremendous advantage in vocational education, we can measure some things. It seems to me important both in getting the concept of why you are setting up the program and secondly you can do something about measuring the effectiveness of the program.

The major question is the second of the three that I listed. What kind of information is it that we want in vocational education? From my perspective, having worked in this field for awhile, it seems to me that there are a number of questions about what kind of information you want. Research projects have to define their objectives beforehand. The question is what information do you want? I would like to suggest that essentially you have two decisions to make in planning a vocational education program. First the decision whether or not to train in this occupation or to phrase it another way, is this an occupation in which education is a good idea, would it be relevant, would it do some good? That is the first decision and then if the answer to that question is "yes," the question is "Is this a place for vocational education? If the answer to that question is "yes," then you have all the decisions. You might say it is a two step process. First a considered decision about whether or not to do training in this occupation. Secondly, if that answer comes up affirmatively, what do you teach them?

I will concentrate first on this matter of the decision to train. Yes or no? In general the question that you are asking is, "are there job opportunities for the graduates? What are the prospects?" This involves an evaluation of the supply and demand for the particular occupation requested. The question that you are dealing with has to do with specific occupations. You are not dealing with the question of general or overall labor surplus or shortage. That, too, is rather a gross over-simplification of the labor market. There are areas in this country at the present time in which there are general labor shortages. Generally, the whole labor force is not adequate in terms of total numbers to fill all the job opportunities. But in most areas at most times, there are both shortages in some occupations and surpluses in others. We are talking about supply and demand in a particular occupation, depending on how you define job clusters. For an occupation or a group of occupations we have to assess simply the supply and demand and see how they balance up, as a matter of identifying the occupation's greatest need in terms of labor or the greatest opportunities for graduates. First, let us take the demand side. You can talk about present shortages, current shortages, or current opportunities, or you can talk about prospective opportunities.

There are a number of reasons for current shortages, a great many of which are so short ranged that they do not hold interest for you. On the other hand when you can come up with a forecast, or predict, or make some estimate of a prospective need, then you are beginning to talk in terms that make some sense in terms of program planning. What we want to talk about is some distance in the future. What we are saying when we say that we have identified an occupation in which training would be relevant through the forecast period, we think that demand is likely to exceed the supply, everything else remaining constant. We are looking for occupations where there is a need for more people over some forecast period. Simply knowing about a shortage is not enough;

training is not the solution to every manpower problem. If you take a look at several of the causes of manpower shortage you will see some you want to get involved with and others you do not. This is particularly relevant to current shortages.

First there is the matter of frictional unemployment, something of which you may or may not have heard. Vacancies exist at any given time simply because it takes a little while for the labor market to act. Rarely is there a person ready to take a job the minute it is vacated by his predecessor. It takes a little while, usually a matter of days to weeks for jobs to be filled. And so simply the fact that the labor market does adjust itself, that other people do move to where the demands are, and to some extent the demands adjust to the kinds of people that are available. This placement process takes some time, means that in any given point in time if you photograph the labor market you will find that there are people without jobs and there are jobs that are not filled. This is not a matter of concern, particularly unless you have reason to believe that this is an extremely inefficient type of process when you are talking about service placement programs. We are not worrying about frictional type of time lag that exists in the labor market. You are not too much concerned in terms of vocational education unless you want to introduce a unit in your program about how to go about finding a job quickly.

Teaching people how to look for work is a very useful kind of enterprise. Secondly, you may find job vacancies because of a very rapid increase in demand. Those rapid increases in demand may be of a strictly seasonal nature. Again, you are not likely to begin preparing people for that type of job. I am particularly conscious of this sort of thing because of the kind of area in which I work. This part of Oregon is faced with somewhat more seasonal fluctuation than most parts of the country. Usually food processing is one in which there is a very sharp seasonal fluctuation in demand. It is simply the fact that there are jobs vacant because this happens to be April or May when the employment upturn takes place. It is not necessarily a signal for you to start cranking up the vocational education program. On the other hand you may well have a trend situation where the demand increase is expected to continue, not only for a matter of weeks until the seasonal buildup has occurred, but in fact, for a matter of years. The Boeing situation in Seattle is a case of this kind in which they have orders sufficient enough to run them for a matter of years. They could even take more and in fact they are getting more. This kind of sharp increase in demand undoubtedly does call for efforts of vocational training. Then a rapid increase in demand depending upon its source may or may not be a signal to talk about vocational education.

The next cause that I would like to mention is what I call unrealistic hiring requirements. Firms as well as the social institutions in which you and I operate are as reluctant as anybody else to make changes. The larger you are the harder it is to make a policy change that is required to adjust hiring requirements. Some industries have learned simply by force of facts of the labor market that they do adjust their hiring requirements over time. One of Oregon's major industries, the lumber industry, used this mechanism very effectively in screening their applicants. In early spring when there is a liberal amount of unemployment among experienced lumber workers, you do not get a job unless you are 21 with a high school education with some broad work experience in the lumber industry and transportation. In August or September, when the industry is still operating at a very high level and all the college students have gone back to school and all the high school students have gone back to school, they will take anything that is walking. The educational requirement is dropped, the experience requirement is dropped, and in effect the hiring requirements have dropped to a level at which the employers can get the supply of manpower they need to fill a job.

Somebody gets a notion about what is a good screening device, high school education for example, and that suddenly becomes a hiring requirement. It gets rid of some of the extra applicants that keep coming through the door. Presumably they get rid of more undesirable than desirable applicants, so they use it.

Even at higher levels there are hiring requirements existing in firms which are unrealistic in terms of the present or prospective labor market. Seymour Wolfbein, Assistant Secretary of Labor for Economic Affairs, talks about the impact of the changing age profile of the labor force on hiring requirements. Traditionally firms have thought that people in the 35 to 45 years of age range were somehow prime applicants. They had completed their education; they were probably well established in that they had their families and had some fairly strong economic incentive to keep working, they have had a few years of experience and demonstrated what they could and could not do, and they were a pretty good looking group of applicants as a whole. This is the age group in which employers look very seriously for promotional material. In the depression days, a rather small number of people were born and those people in a few years will make up that 35 to 45 year age range. In a very short time the age profile of the population will look like an hour glass. The neck of the hour glass is that prime age range. The extent that firms insist upon promoting only people in that age range, they are going to cry the blues at such a terrible shortage of manpower. There is not a lot any of us can do about changing the age structure of the population. It is a very unrealistic hiring requirement to insist that certain promotional jobs should be in that age range. What they are going to have to do is substitute trained, but younger or older, people in those kinds of jobs. It is going to require that to be effective vocational education is going to have to bring about a change in this hiring requirement.

Another cause of shortages is an excessive training period. This has been one of the major criticisms levied against the apprenticeship program in this country. Four, five or six years is an excessive time in which to learn the skills that are needed for some of these jobs. The same kind of criticism is levied at quite a number of professional jobs such as elementary teachers and college instructors.

This is another cause of shortages and one that can be alleviated to some extent within the educational work by adjusting training programs to meet the requirements of the job rather than the traditional requirements.

Finally, one of the causes of shortages is low wages. It is a question about whether or not you want to get involved in producing and training young people to fill these jobs. You can argue for this to some extent because those jobs may be avenues to better jobs, or secondly, because some of those jobs may be about as far as some people are going to be able to go. On the other hand, you have a problem of negotiating with the employing establishments over what the wages are going to be for graduates. As example of this, we were advised a couple of years ago that there was a very serious shortage of dental assistants in the Eugene area. The dentists were having a hard time finding girls to handle the duties of dental assistants. In this state it is a licensed occupation and requires some coursework in radiology and bookkeeping and public relations with the patients. They paid them $180 a month. They came to the Community College and the Employment Service and said, "We would like some training done." We observed that girls just out of high school with a little typing and shorthand could go to work for $235 or more and wondered if perhaps that had something to do with the dental assistants problem. We did get an agreement that graduates of a training course would start at $225 and get a wage increase within six months thereafter.

It is clear from what we have been saying that to know there is a shortage is not enough. Rather we need to know some of the reasons for the shortages, some of which you can alleviate through a vocational training program, some of which after negotiation a vocational training program would be desirable, and others of which you want to stay away from.

In effect we have defined three questions, first, whether to train. We said there were a number of questions involved in that, Secondly, what do you teach when you get a bunch of kids in the classroom. In regard to the first question, whether or not you want to train, first, you want evidence of a shortage, and secondly you want evidence that vocational education is an appropriate solution or at least can make some impact on that shortage. The third question that we identified, what occupational information in regard to vocational education is already available on deciding whether to train and deciding what to teach.

One seemingly obvious source and the one I would argue a very misleading source to answer this is employer complaints. I would argue that these sources, employercomplaints, or informal surveys, may be an indication there is a problem in which you can become involved. On the other hand, they may be extremely misleading. Two or three comments that lead to conclusions on my part in matters such as these are: (1) that employers will tell you that there is a constant need for a good "you-name-it." The school system is always looking for good teachers or good counselors and manufacturing firms are always looking for good machinists or what not. This means a man with some years experience and with a good educational background and who has already proven himself. That's very interesting, but in terms of the kind of thing we are in a position to do, not of a great deal of help, because we are not producing experienced journeymen out of a vocational training program. We are producing entry level peo le and mostly young entry level people. This is a rather different question. When you hear the comment, "Well, I could always use a good something-or-other," the real question you want to ask is, "Fine, but could you use an 18 year-old high school graduate with a couple of years of coursework?" You may get a different answer. We have found that it makes a lot of difference how you phrase the question as to what kind of answers you are going to get. That is one reason that these kinds of sources can be misleading.

The second, is that many employers are somewhat ignorant of the labor market. Small employers, those who have three, four, five or six employees, may simply not have had enough recent experience in trying to hire to know what the labor market looks like right now. There is no question that the labor market looks different than it did in the 1930's and very different than it did as a matter of fact six or eight years ago. Generally, in this country, there is a much smaller number of people available. We have already pointed out that the people that are available are younger and less experienced than those some time ago. In a study of ways in which an employer fills his job we asked the question, "Are there occupations within your plant for which you have definite trouble finding people, for which you consider there to be a shortage?" In tabulating data from this questionnaire, the greatest shortage was among small retail establishments, in which skill requirements are not very high. These people had not had enough recent experience in the labor market trying to hire to get a good feel from the kind of people who were available and they expected to find somebody like the person who had just retired from their firm, with many years experience. Since there are really no good sources of information to employers about how the labor market looks and what kind of people they can expect to find when they go out to try to hire, people become misinformed about what they can expect to find in the labor market and thus conclude that there are drastic shortages.

There is reluctance to change hiring requirements. One of the ways the labor market works is that generally speaking, despite a number of discriminatory problems regarding age, race, sex and education, in a general way the better qualified people go to work first among the unemployed. The supply of applicants both in the terms of numbers and quality will be lower at an unemployment rate of six percent. This requires an effective purchaser of labor, an employer, to adjust his specifications to the kind of quality that is available. The fact that he was able to hire exactly the kind of person he wanted sometime ago, does not necessarily mean that he is going to get that kind now in terms of things other than education. I would say use employer complaints and informal small sample surveys only as a flag to possible shortages. Do not count on it as a sure guide to an occupation in which training is needed because they can be rather misleading.

What am I saying? To do an effective job you have to have systematic, carefully constructed studies of labor market needs. A good study of this kind has a number of characteristics. It has to deal with specific occupations. There are some studies and comments of a general kind which are interesting but do not help in deciding in what occupations to train. A good study must include forecasts because current conditions, may be a reflection of a short run problem, such as a seasonal change, or may be contrary to general trends. You want to put your programs into general trends.

A good study has to consider both supply and demand. Some studies of manpower needs define demands, but do not say anything about currently existing or ongoing sources of supply. You have to take a careful look at both.

Such a study has to have a large sample covering all types of employers. You can think through the statistics of sampling if you want to in terms of the size of sample required to get adequate statistics for specific occupations. These account for less than one percent of the universe. To get reliable data in cells of that size require substantial samples. Most occupations are found among several industries, and most are found in a number of different places. To only go to the most obvious may be misleading.

The approach to putting together data in studies of occupational supply and demand done by the Employment Service, called Area Skill Surveys or Manpower Resource Studies, is to break demand into components, expansion needs and replacement needs.

The expansion needs are obvious. The employment grows in an industry, new jobs are going to be created and the occupation in which those new jobs are created will need additional people. This expansion need is almost always generated by doing some survey of employers and asking them what they project for the future in terms of general manpower needs. These Employment Service studies base the expansion demand very largely upon employer forecasts of their future needs.

The other aspect of demand, the replacement need is the need to fill vacancies created when people,die, retire, or leave the labor market for any of several reasons. Even in an occupation which is not growing there is replacement demand, a need to fill jobs, and that may be a source of need for additional workers. The usual approach, in developing estimates of replacement needs is through studies of working life of average people. It is known how many will normally retire or leave the labor market within a forecast period. It is known that typically young women leave the labor market in rather large numbers in their late 20's, returning to the labor market in rather large numbers in their late 40's. These kinds of data are used to calculate the probable number of people who will vacate a particular occupation during a forecast period to get some estimate of replacement needs. Then the demand side consists of expansion needs, developed usually by an employer's survey, plus the replacement needs generated usually by calculations of probable labor force withdrawals during the forecast period. This is only half the picture, just the demand side.

The supply side is vastly more difficult to get a hold of, to try to appraise. Here is where most manpower studies run into trouble. Let us list some of the supply sources. The school is one. Vocational training programs from all sorts of schools, public and private, the business college, the beauty college, the community college, the high schools have to predict how many they are going to graduate and out of the graduating classes how many will actually enter the local labor market since many of the people who graduate from courses do not actually go to work in those occupations.

Employers are another source of supply through on-the-job training programs such as apprenticeship, management training programs, upgrading programs and all sorts of in-plant training programs for any given occupation. There is the labor force re-entrance. People who come back to the labor force after being out for a while, who may have vocational skills. Another source of supply is the migrants, people who move to the area with skills is a substantial source of supply. In Oregon they account for something like one-fourth of the population growth. Finally, it is a matter of occupational mobility, the general trend of people moving up in occupational classification and occupational skills. If you simply looked at the formal training program, such as schools and employer training programs, you would find shortages of managerial manpower. The reason is that most managerial positions are filled through internal promotions of one kind or another. That is an important source of supply.

The two sides, demand made up of expansion needs and replacement needs; and supply, consisting of a summation of all projected sources; and simple arithmetic, can give an initial tip about training needs.

There are a number of factors that make the interpretation of these kinds of figures somewhat difficult. They require more than just a superficial reading of some over simplified statistics. We are dealing with a rather delicate mechanism, the labor market. It is rare to find vast shortages of manpower except in occupations where there is some institutional rigidity, which prohibits normal adjustment from taking place. We are dealing with percentage terms, rather small imbalances. The reason is that the labor market is to a very large extent, a self adjusting mechanism; it doesn't rely on institutions like ours to take care of supply needs. If the shortage begins to develop in a particular occupation there are a number of things that happen. The whole labor market is capable to some extent of adjusting itself, often needing help from informal training institutions.

For a job that has a large shortage of engineers, employers begin to substitute engineering technicians. The same kind of thing is occurring to some extent in the medical profession where the less demanding tasks of the job are allocated to some lower skilled, type of person. In addition there is formal and informal on-the-job training taking place to help adjust imbalances. Jobs are underfilled and formal programs are set up within plants to do this kind of adjustment. Migration helps alleviate shortages that may exist in one area when there is a balance or a surplus in another area.

In working with manpower data you have to try getting a picture of what is the present situation and some notion of the way in which things are moving to have the kind of job opportunity information needed for program planning.

One source of information is the U. S. Department of Labor. The best source of occupational information is the Occupational Outlook Handbook. It covers several hundred specific occupations dealing with forecast needs, supply and demand comparisons and indicatiang shortages. It also talks about job duties, pay and the other things that you need to take into consideration. The Department of Labor does special studies of specific occupations and specific manpower problems. The Bureau of Labor Statistics in San Francisco, publishes a list of publications that they will send to you free. They have national data about various occupations.

At a more localized level probably the most obvious source is the Employment Service. You find policies varying from one extreme to the other in regard to the introduction of this kind of data but the best kind of data are Area Skills Surveys which are usually available through your local Employment Service Office. In recent years, some offices of the Employment Service have undertaken other kinds of periodic studies. They have been doing studies of job vacancies at a particular point in time to give some notion of current vacancies. Evaluation of job orders that have been unfilled for a protracted period of time give a clue to shortages. Probably the consultation you can get with one of the Employment Service staff is the best help you can get from that agency. To a rather large extent, they are now stationing labor market research people within major metropolitan areas of the country. The operative staff have a kind of perspective on the labor market to give you some clues and to offer auxiliary services such as counseling, testing and job services. Then, of course, depending upon your own particular State Department of Education, there are resources within education to do these kinds of studies.

These are the major sources of specific research information for manpower studies. In terms of the information for curriculum content it seems to me that the kind of data that are published in these studies are not nearly as useful as they are for your initial decision of whether or not to train. Once you have made the decision that you are going to go ahead and do training in this occupation, take into consideration the various things we have talked about and then ask, "What goes into the courses and what courses do you offer?" My conclusion is that there is very little written, formal information that is going to be much help. I am sure that this is the reason so many people have found advisory committees to be not only good public relations but also a good source of guidance in program planning. Probably advisory committees or at least consultation with people who handle placements in those occupations and representatives of employers in those occupations are probably the best sources.

I urge some care in selection of advisory committees. There is no doubt but what the public relations man for a large corporations is going to tell you a very different story than a line foreman. At any rate a balanced advisory committee made up of the right representatives of employers from the whole range of firms that may employ graduates of this kind of course probably can tell you as much about the specifics of what to teach even though it is not in your language. The jargon of education versus the jargon of personnel office is a very difficult problem of translation. These are sources of local information, with professional associations providing some help addition written materials and consultation services.

You will hear from advisory committees, if they are adequately put together, that certain technical skills are required. They will tell you specifically that individuals coming out of a course have to know specific things. They will use words like responsibility, maturity and initiative. Teaching of employability is an absolute necessity in the vocational process! What we are talking about is not so much the specific technical skills, but the way in which a person approaches the job he is trying to do. This includes such things as regular attendance at work, attention to job duties, willingness to learn, some effort to get along with fellow employees and ability to follow instructions. All of these are important for success in any framework and no employer is going to be able to afford employees who do not have these kinds of characteristics. In addition, something that deserves more attention than it is getting is the problem of specific attitudes or work habits. Politeness for a salesman, a cleanliness for a waitress are more important than the techniques of running a cash register. There are very specific habits and work attitudes that are required for various occupational areas that must be taken into consideration in the truly effective program. I am convinced they are crucial. I also think they can be learned; therefore, commend them to be a part of any vocational education program. This is a crucial part of a vocational education training program.

USING INFORMATION ABOUT HUMAN RESOURCES, OCCUPATIONAL OPPORTUNITIES AND EDUCATIONAL RESOURCES IN CURRICULUM PLANNING

William G. Loomis[*]

Just a year ago this month the Berkeley people with a grant of funds for vocational education were looking at state staff structure and bringing in a few experts to talk about how state departments operated. We had the good fortune of having Freeman Holmer, the ex State Director of Finance and Administration under Governor Hatfield in Oregon for eight years, appear. Freeman Holmer was a political science professor at Willamette University prior to taking the job. One of the things that he was mentioning was that they pick bright young people with political science, accounting or business administration background to come in and fill up the layers of finance and budget analysts, and management analysts, perhaps with no experience in government prior to the time that they come in. And in the discussion period, some of the old gray hairs around the table, and I didn't have to ask him, because I knew his philosophy, wanted to know how young people of this type could really field the problems in government on budgeting and business management and so. And I am over-simplifying it when I give you the answer he gave, but he said, "Well really if they were smart enough and sharp enough to ask good hard, smart questions, they didn't really have to know whether they had the right answers or whether the people they were asking had the right answers. They just liked to keep the departments toned up by asking them these smart questions." So I suppose around the table this afternoon there are a lot of you guys that although you might not be in that young just-out-of-college age, if you ask us some of those sharp real hard questions, Dale and I can assume that some of them you are just asking and do not expect an answer.

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Dale and I feel very privileged to get back to meet with you. We enjoyed the session the other day. I hope we leave today feeling the same way.

During the last two or three weeks, other than dashing down to a meeting like this and so on, I have been involved with budgets, money and money, and I do not mean that we have got that kind of money. Those of you that are near Oregon know our problems; and those of you that are not, probably have some of the same problems of taxes and state finance that we do. But I am kind of reminded as I think about the way we will be treating our colleagues out in the field, the Wec's and the Jim's, and so on, we always begin to work pretty close to the belt early in the biennum anyhow; early in the first fiscal year even tighter. It reminds me of the little incident of the story about the bridegroom after two weeks of marriage, went to his pastor and complained that his wife was extravagant. And the pastor said, "Well, extravagent in what way?" and he said, "Well, she keeps asking for money." And he said, "Well, what does she want the money for?" And he said, "Danged if I know, I haven't given her any yet."

So the giving that I have today, I guess, is going to be other than in money and I have been thinking in money terms, you will have to forgive me as I turn the hat around today. Dale and a chap you do not see here today and myself were going to try to provide a program in three parts and it is down to two parts now. Darrell Langevin who has worked with us on our PIE project and many other assignments, and also has worked on these area studies, had his preparation all set up to give, but his Dad is in a most critical condition and has been for a week in the hospital in the valley, so Darrell just isn't able to be with us to talk about one segment of what we were going to talk about; namely, the PIE project. If we do much about that today, it is going to be kind of superficial and it will depend upon the time we have left after our two presentations.

Part I, I am just calling a kind of an overview, of how we look at this whole business of gathering information and converting it into educational needs in three parts, which I think I mentioned the other day--employment opportunity, is one side of the coin. I suppose the other side of the coin, very obviously, is the human resources that are available for employment opportunities. Then if I were trying to wear out the coin situation a little further and say, perhaps the coin on edge is what type or size of institution at the high school level can best meet these needs. Our presentation to you this afternoon will, I think, center more around the high school program than post high school. Please do not feel that we think the post high school problem is less important, this just is not true, but we are making an assumption, erroneous or not, that if we do not have the program at the seventh, eighth, ninth and then in turn the upper grades of high school, we are pretty well not in a position to talk about articulation and the post high school problem. Our post high school program through the community colleges is moving ahead full blast in the State of Oregon. Many of us like to think we had something to do with getting this started. We feel now that we really need to get back and get on top of what amounts to the high school and below upper high school level, and then, in turn, help clarify and improve the post high school program. Some of our staff at state level are working at the post high school level, too.

Our emphasis may sound mostly like high school but it is for the purpose I just mentioned. Part II was to have been our planning, implementing and evaluating project and I will just touch on it for a minute a little bit later. Then if we have more time we can chat about it a little bit. Part II was to have been this part, this is our long range sophisticated approach to curriculum development and planning and evaluating programs.

Part III, which actually in effect becomes Part II, Dale will fill in the gaps of my overview, a little on the rationale, some assumptions we have made about high school programs, some patterns that we have laid out and in a sense, what we think we see developing statewide in the State of Oregon. Then he will also give you, and I think he is in a good position to do this, an insight into one area study of need for vocational education since he had a big part in writing it up. Some of our long range planning that we have done is thanks to the efforts of RCU and Dr. Ryan's personal efforts on some of the approaches on studies. We are indebted to Dr. Ryan from our office.

Now, I would like to show some miscellaneous visuals that we have. I'll move over here now and just flip through a few of these for a quick overview.

All I am saying is what I said the other day, that our overriding concern is that we attempt to come up with manageable and attainable goals, and in order to do this, we feel this whole business of occupational information and related areas has to be looked at with this thought in mind.

This points up all our thoughts, the broad exploratory implications here and the preparation for occupational clusters in the early high school level or at the later high school level and so on, and then specialization at the post high school level or community college level specifically, leading into specific jobs. We have got about a twenty minute speech that one of our staff makes on this, just a point of view. You have perhaps seen something similar to this and I will have you know we had this developed before we saw the Office of Education's version. They have a similar approach. I cannot recall whether theirs' is a ten year projection or not, but the data that we have for this projection is from the state Department of Employment for this state. Against the more or less traditional areas of Agriculture, Office, Distributive Education, which sometimes gets lost, they call it marketing, service occupations, trade and industrial, and there is some overlap in here, but looking at the percentages of where the work force is going to be ten years from now, from data available to us. The next two slides I am going to show project our enrollments, first at the high school level, and second at the post high school level, based upon these percentages. This is grades eleven and twelve. Here was the actual enrollment at the eleventh and twelfth grades only. The enrollment in vocational agriculture, for instance if we pick up grades nine and ten, comes to a figure somewhat over 6,000 in our state. But if we are looking at only the eleventh and twelfth grades, and most of our projections have been based upon this, then we have knocked off the ninth and tenth grades in agriculture. In the other areas, of course, this has not been the same problem. We have that problem, you know, what to do with the homemaking, useful employment area and it is outside here. We have made a projection where we think it should be ten years from now or sooner if we can get there. The gainful employment area moving from 13,000 enrollment in grades eleven and twelve to 40,000 or approximately fifty percent of eleven and twelfth graders.

Here is the same concept and incidently again I would remind you that these figures here, both in the one I was just showing you and in this one, are based upon the approximate percentages shown you and the projected work force ten years from now. In agriculture small enrollment at the community college level today, but this projection is based upon various studies and statewide synchronization of those studies into a statewide projection of community college enrollments, assuming, and this does not show on here, that forty-five percent of the enrollment in community colleges, and this is full time enrollments, so if you are talking about 15,000 here, we talk about 75,000 head count in one year. We usually get a head count, we always do, but I could not tell you what this head count would be speculated to other than to give you the one here, and I do not happen to have it. This assumes that forty-five percent of the community college enrollments ten years from now will be vocational technical or occupational education and fifty-five percent will be college transfer or adult general education. Perhaps an ambitious goal, but the community colleges agree on these goals in general.

Just to remind you as we manipulate state figures around that this little overlay that Dale showed you last Thursday, again taking state information from the State Employment Service and projecting needs, in this case, only to 1970 instead of 1975 but grouping them in a different way that does not necessarily coincide with the figures that I just showed you at either the high school or post high school level when we were talking about agriculture marketing and industrial education and service occupations. This has not bothered us too much, because of this intermix; and I notice you are into this on the blackboard in this agribusiness. This is our approach. Dale mentioned the other day that colors had some significance; you will notice that the purple or whatever you want to call the mechanical, metal, construction, wood and electrical would tend to fall in the industrial, the conventional industrial education for trade and industrial areas but if you looked at the clusters you would find that they do not all fall in the usual traditional pattern from the past. They are all pretty close, though where the green becomes office education and the marketing, or basic marketing becomes distributive. Again, just to show you that this is just a little different approach; we are playing with statewide planning of projected enrollments.

I am really stealing a little bit from what Dale will talk more about and we have different ways that we have approached this. If you work with lay groups and even as we work with one another in public education we find each other thinking there is really no room for occupational education or really anything other than what is already in there in the secondary schools. I think the only thing I would like to show you out of here is state requirements for the State of Oregon for high school graduates accumulate to about nineteen units. Actually the school districts average a requirement of about twenty-two units. Note the electives, and this is the really significant area, in which we feel there is abundant room for any type of occupational education that is needed at the high school level. This is something that I think Dale will talk about from a little different point of view.

Our state superintendent will stand up in a meeting and say we have 218 public high schools and I keep standing up with my statistics and say that we have 220 and we periodically say 219 but I do not know whether this culminates with 221 or 219 high schools. These are seniors spread in group 1 here with between 300 and 700 graduates. The reason we did not come up with the total high school population is because we get into the three year and four year high school problem, so we work with just seniors. Note that the high schools in Group 1 and the high schools in Group 2 amount to seventy high schools out of 220 high schools. They represent seventy-five percent of the enrollment in the State of Oregon. Therein lies a challenge that is not peculiar to Oregon either. What do you do about vocational education? In our state or your state, and you could pick your approach to breaking them in anyway you want, but when you are getting down to high school graduates of one to forty-nine, you are talking about pretty small clientele to work with in vocational education.

We mentioned the other day that one dimension undergirding our statewide development of statistics are various studies either countywide or less than the county or two or three counties. Dale will talk a little more about this from different points of view. Here are the three fundamental fact-gathering items we look for, occupational requirements, human resources and the status of vocational education programs, or the facilities in the area.

In process at this moment is a study that would cover Josephine County, a study that covers Curry County and a study that covers Washington County. Those are the only ones in process now. We do not do credit to Multnomah County because we have funded some studies for east Multnomah County and have funded some special projects in Portland, but we have had reasons for mutually agreeing with our colleagues in Portland to hold off until we got into Phase 2 of this PIE project and offer the data bank. We are still working toward this so we have not approached the City of Portland with this type of study. These studies Dale will talk a little more about in just a few minutes.

And here again, just an overview said in a little different way as to what these studies intended to do:

1. Interpret employment opportunities as they relate to a certain local area.
2. Assess educational facilities in this area and determine student needs and desires.
3. Lay out a plan of actions or alternatives.

Usually these studies are poor, just like the man with his feet in the oven and his head on a piece of ice, because some of these studies have gone for a year and a half in getting completed depending upon the availability of the person or persons who were scheduled to do it. And something happened to six or seven months and it has not particularly added to the quality of the study through prolonging it. But we have the pattern of this pretty well laid out. As I indicated when Dr. Ryan left, she has been a real help in working with us and some of her staff in laying out a model approach. Now we do not have to field a lot of different approaches and you do not end up with a study with only a third of it pertinent to what you want to do. Just give any of us an opportunity and we are going to go out and gather all kinds of information with the thought that, "Well, it ought to be helpful," or "I have always wanted this kind of information." We ended up with two or three like this. You know, you just do not crack them, so our more recent studies which Dale talked about a little is much more to the point and cut down.

Here is this project and if we have a little time towards the last I will talk to you about our long range approach to vocational education. We have a series incidentally of slides and not overheads. We really feel that if we arrived with a sophisticated data bank, computerized approach to vocational education planning, implementation and evaluation that you can look at it literally from this point of view. You could punch the old comput er and the data is in there to get any combination of information which is hopefully up-to-date anytime and we are shooting for this and contend that this is what we will be living with in the very near future.

I think this is all I really wanted to give you as a bit of an overview to the approach this afternoon and Dale will pick up with two areas of this. First of all the over all kind of rationale and some assumptions and so on that we have made in a little more detail about our approach to the high school program and then give you some experiences and background that he has had in working in one area of study of need. Then if we have a little time afterwards we have a little more research material that we would be glad to thrust upon you.

Just my closing comments. I am sure that we don't feel from our department that this is our idea any more than it is something that is apparently of high interest to the people throughout the State of Oregon. If we find, and I am sure we are finding from time to time that we are off down a blind alley, we are going to back up. We are not totally married to the fact that clusters is the only approach. I think we are sold that it is one of the major approaches to getting a manageable approach to this total program of occupational education at the high school and post high school level. I am looking forward with high interest to the findings of this group, I assure you that I for one and Dale and some of my staff will be reading these results of your deliberations. I again must say I feel we are very fortunate to have had the leadership that Dr. Ryan has given to Oregon in this kind of workshop. We are the ones in the state that are going to get the most out of this kind of meeting. Thank you very much. We appreciate the chance to be with you.

USING INFORMATION ABOUT HUMAN RESOURCES, OCCUPATIONAL OPPORTUNITIES AND EDUCATIONAL RESOURCES IN CURRICULUM PLANNING

Dale Pinckney*

What I do have to say this afternoon, and I hope not to talk at you too long, is a blend really of clustering that I talked to you about and Dr. Loomis talked to you about last week. At the same time it bears directly upon information gathering. The two are Siamese twins that you cannot successfully separate and when you start putting them together in some kind of a program that you hope to see become functional, it is hard to separate one from the other. In the case of clustering and information gathering we currentlyrealize these things are pretty much inseparable. Now if you have looked at the yellow guide that we left as resource material, I am sure you have undoubtedly generated a lot of criticism. I hope you have generated some questions. I hope you haven't decided that we are clusterers of the type that is illustrated by that barroom story where the little drunk staggered into the barroom and met his little friend and he had this bag with him and he said, "Charlie tell me what I've got in this bag of oranges?" Charlie looked at it and he said, "Bananas." The other guy said, "No, no, no. Bananas are this color."

Somehow to get at the pattern that is suggested in our guide and which preoccupies our thinking, I would like to use a few slides to show you certain assumptions. Now, these are in that yellow guide, but I would like to show them to you up here and say just a word or two about them.

Now they relate directly to information that has been gathered, and the information is utilized in developing the pattern that we talked about here. In the first place, the tentative copy with the suggested pattern that you have seen actually covers the majority of employment in Oregon, that is to say, if we were training people in these twelve clusters we would be covering the greater part of the Oregon entry work force. So the information is applied.

It takes into account other factors of information gathering such as, how many people do go to college, how many people come out of high school with no specific preparation for occupational entry and these kind of data. Now let us take a look at the pattern that we have suggested at least in Oregon; and I will show you first of all the assumptions involved. There are five. We simply made these assumptions. That doesn't mean you cannot quarrel with them. We have had people quarrel with these assumptions and this is reasonable. The assumptions simply go like this, if we were to have a cluster program then we said that in order to be economical and in order to function, we would need fifteen students in the program enrollment. Now fifteen is not a sacred number. It is just simply the one that was arrived at and thought to be reasonable for our purposes. The second assumption here was that fifty percent of the students of the secondary school, now we are talking about eleventh and twelfth grades here, involved in one or another of the occupational clusters. If you were to say here, fifty percent is high and you met this in terms of how many are enrolled in occupational programs then I would say, sure it is high. I will say the one area where I did this study [illegible] I will talk about later a bit, that area had about seventeen percent involved in what you might call occupational programs. But the programs were not there either. Neither was the philosophy or framework of emphasizing occupational education in the secondary school. The predominant pattern and again I will mention this later you are familiar with it. Those schools were doing a heck of a fine job of preparing students through their college prep programs period or at least a semi-colon.

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Now the third assumption, we said that there should be to have a minimal program eight clusters offered at the schools involved; that is eight out of the twelve. Now again we have had people say this was high. We have had people say why can't people offer fewer? They can. All we said was that for a minimal coverage of work force opportunity, that is to give the kid a shot at various jobs, eight is about the minimum you could offer and say you had a minimal program covering occupations in Oregon. Now of course, ideally we said that to offer a full program would require offering all twelve clusters.

The other assumption, the final one on here was the two hours, now this says two hours daily, and I think this has since been modified to say that we talk about ten hours per week and I suppose that you could say an average of two hours daily in grades eleven and twelve to be devoted to the occupational training. This will be supplemented, of course, by a related course of one hour in the ideal picture. Now it is kind of important to draw this distinction between two hours daily and ten hours average per week. If a curriculum is sufficiently flexible and if a school is sufficiently flexible, these things could be offered at all kinds of hours. Saturdays could be involved, evenings could be involved, it all depends upon the structures that are attendant to the situation. Consequently, if you look at it and just say, "I cannot do this," even though he has a tendency to do that, the program doesn't look that difficult to the administration. If we throw on to the pattern which I have with me, a typical Oregon schedule, now I don't mean to infer that this is the pattern that is to be found in every secondary school and every junior high school in Oregon. I am saying this is a typical pattern.

Now the red we have here are those courses that are normally required. The white block leading across from here and the blue block shows that which could be devoted to an occupational education program. And you will notice here that without any great strain it is quite impossible at eleventh and twelfth to work our two hour average in. It is quite possible to work the related in. And even under present structures it is not impossible to include some occupational education in grades seven and eight. It is not an insurmountable task even without making major disturbance of existing curriculums as they have been set up. Now I do not mean to infer here that Dr. Loomis or I or anyone else necessarily holds any breach for the disciplinary requirements as they exist. I do not. I repeat, this simply shows a normal average kind of a situation we find in Oregon. I do not know how this will compare or contrast with the states that you represent.

Now let me leap ahead just briefly and mingle for this moment at least so I will be talking about area studies and the topic at hand about student enrollments and patterns. You are probably quite familiar with either this chart or a variation of it in facts of your own state or national. It is a situation that exists here in Oregon. All it does is to take the situation of 1,000 youngsters born in 1941 and you will note that these dates are a little old, and trace them through. Now this has actually happened. This is a matter of record. Entering the first grade in 1947 and 1948 we have our 930 or 93 percent here, completing high school in the seventy-five percent, which is still pretty largely true and pretty close to the national problems. At this time forty-three percent entered college and twenty-nine percent completed the freshman year. There may be a little difference here state to state. Twenty-four percent completed the sophomore year, eighteen percent completed the junior year, and graduating with the regular group in process there were fifteen percent in 1963.

It is a pretty typical pattern. It should be pointed out that in later years some of these people returned and did complete so that this jumps from fifteen percent to probably twenty-six or twenty-eight percent still leaving us seventy or seventy-two percent of the youngsters who do not. Now this does not mean much especially as you try to work with areas in getting them to understand the problem, the objectives, the goals, the raw material with which occupational education works and the goals that we try to fulfill.

One of the great advantages of the area study is that if it is developed close to the people, the administrators and leaders of the area, you bring this situation down and zero it in locally. And while they might be concerned with a national pattern or a statewide pattern, you find a great deal more concern when the area study brings it home right where they live, shool by school, town by town, district by district. This to me is one of the great values of the area study. So much for survival rates.

Now, whether you are convinced, whether you succeed in convincing people of the need for occupational education here or not, I do not believe that we have failed you. There still remains the problem that Dr. Loomis referred to and I would again like to show you a chart that we did.

This is the same chart but it illustrates the small school problem. Now go back to our clusters and the patterns I showed you. I talked to you about fifteen students in a program. We talked about eight or twelve programs. Let us take twelve for illustration. This means that you would have to offer a full scale program, and to do it effectively, you would have to have enrolled 180 seniors. Look at our schools. Look at our enrollment. This means that if you fulfill the fifty percent enrolled, fifty percent and this was one of our assumptions if you will recall, then you must have three hundred sixty seniors enrolled or available to enrollment. Fifty percent would be one-hundred-eighty. Here is the pattern we live with.

If you look at it closely you will notice that one-third of our schools enrolled seventy-five percent of our students. Forty percent of our schools enrolled six percent of the students. And of course, there are the factors you know about like geographical separation, individual school identity and student affiliation. All these things rise up to trouble you. So much for the pattern and until I am back to this later, so much for the problem. I am sure it is not an unfamiliar one to you folks.

Now I would like to go back again to our yellow guides just quickly. I kind of run this in on Bill. I do not think Bill expected me to get into this, but I feel that I should at least make a mention of this. You may recall last week it was brought up in the questioning session that the cluster programs we showed did not really seem to do a great deal with grades seven through ten. Now there are certain factors here that I think should be considered by you as you ponder what we have done and what our conception is, and that is seven through ten would embrace at least these things. First of all, exploratory experiences; second, as section six in the yellow guide points out, we look to integration through these years in all areas, that is industrial arts, home economics, the traditional disciplines, and guidance and counseling; the third thing, development of the material for grades seven through ten has only begun. It is still a major problem here at least and still a major challenge. The fourth thing, I think, should not be lost track of and that is none of us has the slightest intention of throwing away existing strengths that may be found in vocational education. For example, the mere fact that agriculture does not show in the cluster grades nine and ten does not mean that it has been tossed out the window. It simply means that it does not show in the cluster at eleven and twelve, nothing more, that is all.

Now let me talk briefly about number two that I gave you, which is integration in all areas. And here I hope you will pardon me if I show some strong feelings about some of our disciplinary approaches to education today. No I am not frightened to say this, my boss knows I feel this way, and I don't think he will be shocked or angry if I voice them here. However, let me say that I am not speaking for him, at least certainly not at this point. Now in our guide when we talk about occupational education and exploratory experiences it was in no sense intended that this was to be provided solely at the expense of existing courses or solely by people who are currently involved in occupational education or vocational education. That was not the intent. I have forgotten the page number, but I want to read this slowly. You may have read it, it is in the guide, but I want to read it again, and call your attention to it. In section 6 it says this:

> The direction indicated in this guide seems to suggest a different approach than has been taken, one which would emphasize the relationships that exist among the various disciplines making up the total curriculum, which would correlate the objectives and activities of these disciplines into a meaningful whole which pointedly includes occupational education, and which clearly identifies the major and supportive roles of each within the total approach.

Now to me that is the major gist of the section. If you missed it, I hope you have not missed it now. The question might very well be asked is "Have you done this?" No. No, we have not. We are trying to work an approach to it. We have not done it. So you see the disciplines as they have existed are extremely resistant. To me, at least the identity of a student's activities with a highly specified discipline goes downward through the curriculum. It does not seem to make much difference that for those who do not reach the professional level where the academic discipline provides an occupation, it needs to be integrated into a total product. It seems to me at least that this is where we are missing the boat. One man has put it this way. And again, I hate to read to you, but I would urge you to listen.

> Consider for example what happens when a school system is confronted with the proposal to adopt a new mathematics or physics curriculum. Let us assume that the proposal already has a great deal of publicity, that some influential parents have already urged the school privately, or not so privately to try it. On what grounds does one divert and often it does mean diversion, funds from other allocations to meet the proposed change. The proponents of the new course are content to rest their claims on the superiority of the content, that it is good mathematics or physics and better mathematics or physics than that now being taught.

One finds a disinclination on the part of evaluators to consider any objective other than the one internal to the materials to be tested. To do so makes the evaluation fuzzy, and it ignores the side effects. Is this a good mathematics course, but they do not ask, good for what and for whom. For general education or for special education, for the interpretative or the applicative use of schooling? And to some seventy percent of our youngsters it is the applicative side which is ignored that needs most to be counted.

This is where I quarrel so strongly, as Bill knows, with some of these factors of a total disintegrated or exploded discipline approach at the secondary and junior high school level, to say nothing of below. Let me quote my author again:

> One loks in vain for any systematic discussion as to the demands of citizenship of vocation, of living with some degree of sanity and satisfaction in the kind of world we have. That pupils will learn more mathematics or biology or whatever else is in the package is the only factor which seems to receive serious consideration.

As for the consumer, the principal, the teacher, the parent, the youngster, the promise that children will be excited by the new package is supposed to answer all possible objectives.

You know, I assume that a good murder is exciting. You know the highest praise that a thing can have today is that it is exciting. We do not ask, is it any good? But, oh boy, if it is exciting! I suppose this is a logical outgrowth of television. If it is exciting, great. I find that Dodge girl exciting, very exciting.

Let me wind this up. One looks in vain even for an explanation of the relationship of most disciplinary proposals to the total domain of knowledge that is supposed to be probed by the total school experience. How will the new biology course be related to the social studies, or to occupational training? How will it be introduced so that it is relevant for solving or understanding social problems, or work problems, or economic problems? And what has this biology course to do with what is going on in the rest of the curriculum anyway.

Now all I do is highlight the problems that I mentioned a moment ago, emphasizing the relationship, correlating the objectives and activities into a meaningful whole which pointedly includes occupational education.

The kinds of things that go into area studies are two things. First, the kinds of information that are developed and do come down to live with people in the area. Second, the by-products of a study if it happens to be successful in an area. First of all, just in quick illustration of the kinds of data, I found the people of the north coast area most receptive to and most inclined to reach. These people, for example, found it rather astonishing that the youngsters of their schools in classifying their high school education broke up with some roughly fifty percent saying it was simply general education, pointed in no particular direction. They were a little astonished to find that they send about forty-three percent of their youngsters to college, about forty percent consider their high school to be just that, college preparation, and about forty-two percent intend to go to college.

Perhaps the thing that shook the people there the most was the fact that fifty-seven percent of the kids said they wanted occupational education, and the way it was put in the study was training for a specific occupation; sixty-seven percent of them wanted it in the secondary schools; sixteen percent said they got it. Now let me repeat two of those. Forty percent said their high school was college preparatory and the same forty percent roughly were going to college. Sixty-seven percent said they wanted occupational education, and of those, sixteen percent felt they might be getting it.

Well, these data have an impact. They have an impact particularly in these areas and now I am talking about by-products. Now let me try to condense this.

First of all, this particular area of study and untold others found evolving in the area for the first time, definition of vocational education. I mean with the lay public? I do not. I mean with the educators in the area. For the first time a definition was emerging.

Number two, a concept of vocational education within a school or within an educational setting was emerging.

Number three, there was a very definite public relations effect. Now, I realize this relates to the concept and the definition. But a very definite public relations effect came out of it.

Number four, for the first time goals for vocational education began to evolve specifically.

Number five, for the first time the problem in the area was delineated.

Number six, the study provided a platform upon which they could stand for a unified approach. In this case, a two county area--a unified approach to offering occupational education.

Finally out of the study there grew a conceptual and organizational framework. I will repeat it for those of you who are interested in these spread effects. For the first time there was a conceptual and organizational framework and it is within this framework, organizationally and conceptually that developments in vocational education in those two counties are now being directed and coordinated.

For the first time, the people in the northern end know what the people in the southern end are thinking and planning to do. Now that was not a specific design of the study. None of these really were specific designs. The specific designs were those covered by Dr. Loomis and these others we picked up.

Now, a final word. As things develop, some people are a little confused about the fact that I can be so positive about a thing and so undisturbed when it seems to go not quite the way I seemed to think it was going. This doesn't trouble me a bit. It is simply a part of the kind of educational enterprise you work in and I work in. There is a great disparity on where we start to go and where we wind up. Historically I see no reason for this to change. We seem to head out to go one place and then to our surprise we end up in a slightly different place. This is very upsetting to some people. It does not greatly disturb me for these reasons.

It is not possible to anticipate the results of group activity. If I stand my friend, Wec Rumbaugh, up and say, "Wec, what are your values?" Wec might provide me with (a) an honest report of what his values are; (b) a dishonest report; and most likely (c) an intermingling of both truth and fiction. I do not care. That is all right. My point is this if we put Wes Rumbaugh with Jim Lacy then not only is Wec Rumbaugh changed by the fact that he is in interaction with Jim Lacy, but what was true of Wec Rumbaugh alone does not remain necessarily true. Consequently, I simply say this. It is not possible to fully anticipate the results of group activity. So we develop a guide, a cluster of bananas and we disseminate it, and it is accepted in varying degree. Its implementation is undertaken, but these are groups. These are separate groups and it would not be possible to anticipate the results of the group activity and then the interaction of what they are doing or with what we have done. So we get into an enormously complicated ball of wax.

Let me put it this way. The future consequences of a present activity are simply not known. Now that has been true of our area studies. It is going to be true of our clusters and it will surely be true of our guide.

Now this point, change in anyone area always combines with change in other areas in ways that we cannot foresee to create unanticipated results.

This leads me to a magnificant generalization. Today's decisions whatever they are create tomorrow's problems. And I found that out in many occasions in my life.

Now, after all the talking I have done at you people, I can not resist reading this to you. It is from Alice's Adventures in Wonderland. It picks up where Alice is talking with the Duchess. Many of you will remember this and this is probably just about the way you people feel about this time and very likely the way I sound.

"Very true," said the Duchess. "Flamingoes and mustard both bite and the moral of that is: birds of a feather flock together."

"Only mustard isn't a bird," Alice remarked.

"Of course it is," said the Duchess, who seemed ready to agree to everything that Alice said. "In fact, there is a large mustard near here and the moral of that is: the more there is of mine, the less there is of yours."

"Oh, I know," exclaimed Alice, who had not attended to this last remark, "it's a vegetable. It doesn't look like one, but it is."

"I quite agree with you," said the Duchess. "And the moral of that is, Be what you would seem to be; or, if you'd like it put more simply, never imagine yourself not to be otherwise than what it might appear to others that what you were or might have been was not otherwise than what you have been would have appeared to them to be otherwise."

Thank you.

DEVELOPING SPECIAL CURRICULA FOR STUDENTS WITH SPECIAL NEEDS

Victor Doherty*

This morning I would like to discuss with you the book by Barbara Kemp, The Youth We Haven't Served. The first part of the morning will be spent in reviewing the contents of this publication and attempting to make it useful to you. I think it's well in approaching any book to attempt to see what has been intended in it's publication, to fit into a frame of reference so that one can see what it holds in the way of uses for you and perhaps some of the things that are its limitations. This particular book, I think, might be referred to as a bible of considerations that should be attended to in the development of a vocational program. It sort of covers the water front and lists many sources of reference. It deals with many topics. There is a point of reference to go to on many subjects in the field of vocational/technical education. In particular, I would think it was designed to show how the Vocational Education Act of 1963 might be brought into play in the various areas of development in vocational/technical education.

It is designed particularly to make people more aware of the needs of the culturally deprived and of the role that vocational education can play in helping to meet those needs. Now I think that we have been exposed to this problem. We have heard many speeches on it, read much about it, heard a great deal about it, and thought a great deal about it. We all know that the problem of the culturally-economically deprived is one of the prime problems of education today; and perhaps not too much attention can be given to this, nor too many reminders be given to us as to the importance and urgency of the problem. It is a problem of great social significance today, wherever the number of human lives involved and affected is as great as it is in this area. It is of course, a matter of great concern to educators. I don't think the problem can be over emphasized. So even though the things that may be contained in these books may be things that you have heard about before, in many cases, I think it will not hurt us to review some of these points, and to spend some more time considering them.

The book opens with a review of the environment of the culturally deprived. And some of the points listed here are the over crowded conditions under which people live, the lack of privacy, the fact that people in these environments tend to stay within a relatively short distance of the place in which they live, so that their experiences are extremely limited. There is a lack of successful adult models in many of these families, scarcity of books, reading materials, writing materials, educational poise and things of this kind, an impoverished vocational environment in the home. The general neighborhood environment is often found characterized by degrading influences as regard to the physical facilities themselves, with regard to the quality of life that goes on within these communities, the behavior of the people within them, and so on. The students who come out of these environments generally have a lack of experience with success, both at home and in school, and a great deal of this lack of success stems directly back to their environment. It is extremely difficult when these youth stay part time in school and go back and spend a greater part of the day in the environment that is producing the very problem the schools are trying to compensate for.

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It might be mentioned that theoretically the removal of these people from the environment that produces the retrogression in learning can be compensated for by a greater school day, by a greater school year, more time spent out of that environment. The greater the portion of time spent in healthy and good learning environment, the more likely we are to overcome these problems that environment introduced. I'm sure you're all aware of these points, but I think we might review them. Many of these students have n ot enough money to dress themselves and to feel that they are worthy in terms of their own personal appearance, in relation to other students. Ultimately the person rationalizes the difference here and assumes that it's the right way to behave and to dress and so on. Then you have a built in value system that is very difficult to change and alter.

I think one of the contributions of this book is the review of learning characteristics of such students, thus postulating some positive points on which you might build an educational program. The statement is made that students can be motivated from these environments if things that they are being taught are of interest to them. So, interest becomes a prime factor in the development of these programs.

When we talk about clustering occupations and so on, we have to keep in mind the fact that we may be in this process eliminating some possibilities for motivation. This isn't necessarily something central, but something to keep in mind. We do need to look very hard at certain things these students are interested in and attempt to provide experiences in school that will capitalize on these interests. Again, I say these are things that you've heard before. We know that these students can work well and hard on tasks that have a purpose for them. The things must be motivating to them, must have purpose for them, as of now, because one of the characteristics of these students is that they are unable to intellectualize a future goal, they are unable to project themselves mentally toward a goal, and direct their here and now activities toward those long range goals. They must see immediate results, they must see immediate purpose in what they do. These people have a capacity to hold some loyal, personal friendships. This provides clues in the construction of programs. Perhaps it would suggest that we need to work with individuals who are spheres of influence among their peers. It would indicate that the formation of some kind of peer groupings on interest basis might be a way of getting at their interests and motivating them. If you can find common interests among two or three of these students and get them working on something; then they develop their loyalities among the working group and these loyalties can be capitalized on in future development of learning opportunities for the student. The point is made here that mental associations formed by these students frequently differ from the mental associations formed by the general public, which means really that their experience has lead them to associate words and symbols with actions and thoughts which are somewhat different from, and perhaps misrepresenting the nature of things. It does indicate that they do think about things differently, which would imply that when working with these students it is necessary to realize that communication words and symbols that mean one thing to the general public will not mean the same thing to these students. So, it's necessary to explore the meaning of things with these students to understand how they look at things, what their frame of reference is, what their interpretation of particular objects and events and actions are because you cannot teach them on the assumption that what you're telling them is communicated to them directly in the sense that you feel it's being communicated to them. I think this is a rather important point, a rather subtle point, but it certainly is well worth keeping in mind.

These students come to school with a variety of deficiencies both personal and experiential, that is physical, mental, and so on, and very quickly develop achievement problems in school, highly as a result of these deficiencies. It's characteristic that they will have low reading ability, limited vocabulary, speech deficiencies, both in the construction of speech and the articulation of speech. They will be somewhat slow in performing intellectual tasks given to them. In many instances, they'll have poor health and poor health habits; and I don't think we realize the degree to which poor health can have an effect on learning in the classroom. I think this is something we should all bear in mind as we talk about building curricula and programs to be sure that attention is given to such things as physical problems, health problems that may be plaguing these students and interfering with their ability to pay attention in class, concentrate on a job, in general, to develop interest in what's going on. The child that is too sick is not a good learner; and it's not part of the make up of teachers, as a general rule, to be aware of these things as they should be. And working with children of this kind, there is a special need to be aware and to devise systematic procedures for determining if there are health problems that are interferring with learning.

You encounter anti-social attitudes, and it might be commented on that anti-social attitudes are augmented and reinforced by some of the things that are done in schools with students. If we neglect to take into account the problems these children have in learning, if we neglect to take into account that the way they learn is different than other children learn because of their experiential background, then we are likely to continue this failure syndrome, build on it, and create further anti-social attitudes. This we must be careful to attempt to avoid.

There is in general an indifference to responsibility, and I think again here that the implication is that purposeful activity must be a part of their experience; success must be a part of their experience from the minute they hit the school system. We can't overcome these attitudes and problems once they're developed so, from the kindergarten on up, or the pre-school experience, whatever it may be, on up, we must give them purposeful activities so that they do not develop this indifference.

The failure syndrome is the thing that results from all these problems compounded and coming to bear on the individual. We have a system of grading that builds this failure syndrome. The way we grade, the way we approach the grading of individual work, daily work, all leads to the fact that we make an arbitrary assumption to begin with that some people are going to fail. As I have worked with grades in the Portland school system I've been appalled to see each year that approximately 30%-35% of our students in every subject field in the high school get D's or F's, which to me indicates a level of achievement which is an indication that what has been taught has not been learned sufficiently well enough to be teaching in the first place.

Now, what does this mean in terms of waste of human resources? There's a tremendous waste of human resources here. And I think Mager and Beach hit this very nicely in their publication in which they talk about grading according to performance goals, rather than grading according to comparative performance among students. You set your goals to be reasonable and attainable on the part of the students, and then if you do not attain these goals you re-examine your methods and you attempt again to teach these subjects if they are considered to be essential to learning. The thing is as general as our society. It's embedded in our society and until you can talk of some substitute which makes sense to people logically to replace this, you're going to have pressure to do it the way it's been done. You must have a workable logical substitute, and I think the substitute that Mager talks about here is one of the best. That is you set out your performance criteria, , you vary those performance criteria according to the job requirements, you vary them according to the learner, and then you have a workable system. This doesn't mean it's a simple process, there are lots of problems in working out a system of this kind that will work; but it can be done, and it really must be done, because this is our biggest leakage in human resources in our whole educational program right here. It's the biggest source of waste of human potential.

After listing these series of deficiencies and malfunctions in her book, Miss Kemp also talks about interpreting the way these students interpret the school day. And you know about the tedium and lack of relevance and so on that she talked about here. I think the author makes a good point in the fact that the vocational education program is uniquely qualified by its characteristics to play an important role in this fight to break the cycle of poverty and provide a type of education that is meaningful to students. I think you're probably aware of this that within vocations we find two types of motivations: We find the economic motivation, which the job for which a person is preparing will provide; and we find the intrinsic motivation of the types of activity that are involved in some vocational work--for example, electronics and automotive work, where you find so many boys are so much interested in these things just naturally. And if we can, early enough in the educational process see to it that students do not develop anti-learning attitudes which make it difficult for them to even enter a formal program of instruction in areas of natural interest to them later on. We must attempt to hit it lower so that when they get to this point, they will enter these programs and enter them with some positive attitudes toward learning. It's not just a matter of saying thatthese are areas of intrinsic interest that you can expect kids to come into and work successfully when they get to certain ages, we must tip the motivation aspects of it much earlier so that the attitudes that are developed are positive all the way up the line, and then you can capitalize on the intrinsic motivating factors in vocational and technical education at say the junior and senior high school level.

Miss Kemp calls attention to the responsibility of school boards and administrators. These have to do primarily, of course, with the securing of funds, with the establishment of proper relations with the community, with the organiztion of programs, and so on.

It is important to consider qualifications of teachers and in working with these students; being interested in working with young people, being able to help the slow learner as he attempts to learn, being patient with him, reinforcing his efforts by telling him either the things he is doing are worth doing, or giving him encouragement and praise for what he's doing. The teacher must be able to communicate with students. The question still remains, how do you develop these qualities?

The importance of organizing within a state for vocational education is stressed by Miss Kemp, who suggests that there should be a person serving under the State Director of Vocational Education, known as the Supervisor of Persons with Special Needs. Essentially this would be someone with responsibility for culturally, socially, and economically deprived students. It should be a person at the state level who would coordinate all activities relating to programs for these students. This person would work with research people at the state department level to coordinate the research and development activities that go on within a state. This person would work with a state advisory committee, which would be appointed for the purpose of forming a connection between certain organizations and interests in the community and in the state and the person directing this program, so that there may be feedback about needs and there may be dissemination of information about what may be done about the needs through the medium of this advisory committee.

This is part of what Miss Kemp refers to as a model for vocational education. There are certain sources of aid available for these programs. The Vocational Education Act of 1963, of course, with which you're all familiar is the major source of funds, in addition to Title One of the Elementary and Secondary Education Act of 1965. The MDTA is another large source of funds. The

Appalachian Regional Development Act of 1965 also provides funds. In drawing my remarks to a close, I want to tie it in with our general approach. Where in this model of curriculum development that Dr. Ryan presented do we fit this type of information about the needs of youth we haven't served?

All right, consider the needs of society and culture. This is one place where it fits. Is there any other place in the circle?

Assumptions? What specific aspects of the assumptions would it deal with here? Objectives, right. There is another area, though, where it is more germane. Considering the needs of the learner, right. This is a very important point where this type of information would come into play.

Now just let me briefly review the remaining elements of the model, so to speak, that Miss Kemp has defined. We begin with the state supervisor, we take the state advisory committee that works with the state supervisor. There are certain considerations that must be dealt with and provided for in a state wide effort to provide education for this type of student. First is the public information aspect of the thing which is to be handled primarily at the local school level, as information about school programs is probably most effective when disseminated in the school level itself. The policies of the state may be geared to helping districts approach a thing at a financially feasible way. After the inventory of funds, information on persons with special needs must be gathered and organized. Training agencies outside of the school must be contacted and their support and help must be enlisted whether they are specifically existing as training agencies or whether they can simply have a training function because of their character. Information on the job market must be gathered. In the vocational education program itself there are certain things that must be considered such as facilities, plant equipment, construction materials, staff and program content. Then the community is another area included in this model--how you coordinate with the community, how you use the community to support your program. The final element in the model is job placement.

MEETING NEEDS OF DISADVANTAGED YOUTH

T. Antoinette Ryan[*]

Today is to be focused on youth with special needs--implications for vocational educators. You have spent this morning with your chairmen discussing this problem, and Dr. Doherty has shared with you his views on the topic. Throughout the institute we will continue to be concerned about designing vocational education appropriate to meeting the needs of disadvantaged youth. This afternoon I would like to call your attention to two papers by Barbara Kemp, Youth with Special Needs and Non-College Bound Youth: Guidance for those with Special Needs. I also commend to you a memorandum by Barbara Kemp and Webster Kenny pointing to ways youth organizations can serve those with academic, social, economic handicaps.

Now, I would like to share with you a few thoughts on our responsibilities in meeting needs of youth with special needs. These children and youth have been called disadvantaged. These youth--the dropouts, washouts, pushouts, social outcasts who have not been able to function in the structure of educational competition we have set up for them--in fact, are disadvantaged. They do not have the advantages which their middle-class cousins have; they do not fit into the middle class system which we have structured for the college bound student, the nice, middle class student from the nice, middle class family who speaks a nice, middle class language. If we look at these children and youth from this frame of reference, indeed they are disadvantaged. We have substituted obstacles for advantages. They do not have a fair chance, let alone an advantaged chance to hurdle the obstacles between them and the middle class ticket to economic efficiency, social productivity and personal satisfaction. Their need for the ticket to freedom--the high school diploma that opens doors to apprenticeship, or qualifies for entry level occupations, or meets requirements for technical training programs--is as great as the need of college bound youth. Their chances of getting the diploma are not the same as their college bound cousins. These youth are disadvantaged--by society.

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They have educational deficits, educational deficiencies which society promotes, creates, forces upon them. They were not born with a special gene labeled "educational deficit." Society has forced them into failure. They have been placed in positions where they were almost certain to fail. And, failure after failure eventuates in deficiencies. Society has done this. These children and youth were not born failures; they were born into a society which created an environment in which they were doomed to fail.

Our children and youth are not failures. We are failures. When I hear an administrator or teacher say, "He is a failure," my reply is, "The school has failed." We have a responsibility to face up to the failure of the school, and cease talking about children and youth who fail. Let us look at some of the assumptions that we are making today.

We look at our youth with special needs and say, "These youth have failed; their failure is related to economic deprivation or cultural divergence from the mainstream of society." We can say this with some measure of security that there is more than a grain of truth in the assumption that failure is a function of economic and cultural factors. However, to simply stop with the statement of relationship is to beg the question. We need to go a step beyond, and ask, "In terms of our educational system, what are we assuming?"

We say that the program of education, the schooling offered to the educationally deficient--Negro, Puerto Rican, Indian, Caucasian--does not work. We say that the longer the culturally disadvantaged, the economically deprived, the educationally deficient are in school, the more inferior their performance becomes. We say that the poor performance of these children and youth is a chronic situation; and we suggest that perhaps it is because the children "are no good," or "they lack motivation." We need to take a second look. We need to look at the assumptions we are making when we draw these conclusions.

The first assumption is that there is one correct curriculum, schooling, texts, materials to be experienced by every child. Given fifty schools, taken at random across the country, what do we find? The nice, neat two by six by four classroom, with a set of texts--the same for every pupil in the room. We practically have a single standard curriculum; and this curriculum has driven forty to sixty percent of the nation's children and youth out of school. Certainly, there are some exceptions to this miseducation of our minority youth. Some of you come from places with unique programs, student-oriented programs, individualized programs. Still, the pattern which prevails in most of the schools is the single standard system. The assumption that one school program will meet the needs of all children and youth is ethically and morally unsound; for us to hold this assumption makes us ethically and morally irresponsible. I do not think we can ignore our obligation to do something about this situation. We assume that there is no need to seek alternatives. We assume this because we believe in the static school. We fail to take into account that there may be different approaches with varying degrees of effectiveness to realize different objectives with different kinds of students.

Another assumption is that school failures are caused by the pupils; that the children are at fault. Schools are not particularly interesting places to live and to work--for many children. Especially is this true for children with educational deficiencies, learning deficits. Some of the techniques we have employed--grading on the curve, detention for being tardy, cutting ridicule for language idiosyncrasies--tend to make school even less interesting to the minority youth. We say the reason these children and youth are defeated is because they come from impoverished backgrounds; because the family lacks money; because they are from a minority group. We unwittingly take the stand that because the home is shabby; because the family is poor; because they belong to a particular race that they are doomed to failure. I cannot condone this. Rather than accepting educational defeatism, I suggest that we rise to meet one of the greatest challenges of the times. Let us say, "This is a challenge to vocational education; a challenge to me as a professional educator."

I recall an experience I had in my first teaching assignment. We were required to stand outside our classroom doors before school and between classes. My room was at the head of the stairs, and I was standing outside the door as the students were going to their first period classes. A teacher who had been teaching longer than my total number of years was standing next to me, as a boy reached the top of the stairs. His hair was long--and it wasn't the style then; his trousers were down low, nearly off. He was certainly not the neatly scrubbed kind of boy I saw in church on Sunday. Still, as I looked at him, I saw a challenge. My task was to help him learn. I was thinking, "I wonder what I'll need to do to help him with his studies." My colleague said, "See that one! He's no good. I can tell by looking. We may as well not waste our time on him. Never amount to anything." What was her assumption? That he is at fault; that we have no responsibility. I cannot accept these assumptions. I think that for us to assume that our children, our youth are at fault is to be intellectually dishonest; professionally unethical.

As long as the educational personnel continue to be victims of this ideology that makes a standard school legitimate, makes children scapegoats, then we are abrogating our responsibilities to the children and youth who have been forced into a disadvantaged position.

Let me offer an alternate set of assumptions. I assume there is no one kind of correct schooling. We need to diversify our educational arrangements. We need to explore avenues of administrative facilitation of diversity. We can offer to students a chance, a chance to work with individuals they find compatible on programs they find attractive. How many times has a student gone to the counselor with the complaint, "I can't get along with Mrs. McQueen," and the plea, "Please, may I transfer to another class." How many times has the reply been, "We can't do that. We schedule thirty students in every class. We couldn't let you do that, be cause if we let you transfer everybody would be wanting to transfer." Are we not pushing this student out the front door of the school? We need to offer to him the option of working with people and programs he finds attractive. This means the counselor will not make the decisions for the student. This means the students will have a vested interest in making decisions. A counselor must implement a guidance function, but this does not mean that he is to make decisions for the students.

We should have a wide variety of alternatives. This is especially true in vocational education. If we are to compel our children and youth to go to school, the least we could do would be to make this a reasonably satisfying experience for them. We should attend to institutional arrangements, to achieve an integrated approach in which students have a wide range of choices of general and vocational areas. We should break down the artificial barriers with which education has lived for so long. Another idea which has been offered to provide alternatives through institutional arrangements is the moving school, with students meeting for two months, for example, in a downtown bank building; classes in state buildings; classes in business and industry facilities. This possibility holds particular promise for disadvantaged children and youth, as it would afford them an opportunity to see occupations, to see people at work in occupations they did not know existed. This would be a work oriented approach.

These arrangements, tied to the world of business and industry, are a far cry from the two by four by six classrooms.

These are some of the possibilities I see as having potential for meeting needs of our disadvantaged children and youth. Those with special needs require special programs, special teachers, special facilities. One final assumption, school programs can be failures. Sometimes we erroneously assume that it is impossible for a school program to be a failure and we maintain a program as if it were something sacred. Let us not be afraid to assume that a program can fail; that it should be modified, replaced, revitalized.

If we are to meet the needs of our youth, it is going to take special vocational education programs. The 1963 Act mandated this, clearly stipulating that we have a responsibility, an obligation to develop programs to meet the special needs of disadvantaged youth. To do this means we are going to have to toss out the first set of assumptions, and substitute a new set. I suggest that your task now is to start building a viable set of assumptions from which you can build viable programs to meet the special needs of our disadvantaged children and youth.

PERSPECTIVES AND QUESTIONS FOR VOCATIONAL EDUCATION

James O'Gara *

I have very strong feelings about vocational education. I do not look at vocational education as something separate and apart from education. I look at total education, not general education and vocational education. I use a single term, education. Too often we get trapped. A lot of people believe that vocational education is remedial education. Vocational education is not remedial education except for certain people who can profit in a remedial type of way.

There are two topics in education today that seem to be most predominate, one is vocational education and the other is sex. I am not going to talk about sex; I am going to talk about vocational education. It seems to me that there is something happening in education that I have never seen happen in my thirty years in the business. I spent three years with Northwest Airlines as supervisor of trade testing, in the early 1940's. One thing that I found after contacting thousands of employees, that in the areas of occupations there are certain common elements that are common to all occupations. Lynn Emerson in an article which appeared in the Industrial Arts Education magazine referred to these. We need to find out the kind of vocational program which will be a part of total education which we call common curricular elements. You hear about job clusters where they are trying to get these elements drawn out.

Originally my first acquaintance with Dr. Mager was when he was involved in the Richmond Plan. What is Dr. Mager's background? He is an industrial psychologist. Charles Crosser, one of the old time leaders in vocational education was not a vocational educator; he was a lawyer. It begins to point out something in vocational education. Let us look to business and industry for help in development of vocational education programs. I am speaking particularly about the content.

Two years ago we did not have any advisory committees in Portland, that is, formal advisory committees. It is quite interesting to find in the feedback from these committees although they meet independently of each other that we are getting the same message from all of them. They are talking

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about breadth in programs. They are talking about one thing I seldom hear vocational educators talk about and that is common everyday economics as it pertains to vocational education.

This article appeared in the Kaiser Aluminum News. In the opening statement, it reads:

> Over the years the barrier has been created between the schools and business. Educators feel that business is too crassly commercial and businessmen feel that the schools are too out of touch with real life in the years to come. The barrier will have to be breached for the schools depend on business for the kind of economic environment in which they can flourish and business is dependent on the schools for the quality of management, the efficiency of its employees and that attitude of the general public toward its products. The most significant merger in the next thirty-five years will be that of industry and education.

This may well be prophetic. This is something at which we should be taking a very close look. Any content that is being taught in vocational offerings must pertain to the business-industry world or it should not be there. It is just that simple.

Now how do you determine content in times of rapid change? This is a challenge we have to meet. I am talking about all occupations, not about the highly technical or highly skilled. What percent of our work force today is in the service industry? Specialized vocational schools, specialized vocational offerings are geared to production and not to service. We are going to have to take a very close look at that, because we cannot develop programs without looking at the structure of the labor force and this structure is well outlined for us. There are some people that are doing some work along this line. I expect a change in society by 1980, that will be a compact of states involving the mid-mountain states, Colorado, Wyoming, Arizona. One of the things mentioned is that something must be done about the teaching of problems of urbanization in the ghettos and less about the American Indian if we are going to prepare people for the world in which they are going to live. How can you use history to teach for the future? We have not done it. It has not been done this far. We are going to have to look at a new approach.

These are the kinds of things at which we are going to have to take a close examination. Let us pick the strengths out of what we have and develop the strengths for what we need. This is the thing we are going to have to do. Vocational education up until the Act of 1963 was a very small segment of the total occupational picture. How many people in the United States are employed in areas which do not require a college degree? How many? About eighty-eight percent. We are looking, then, at eighty-eight percent of the population. You will notice in the Act of 1963, three things: to maintain, improve and extend vocational education so that people of all abilities are served. It is very difficult with some individuals to determine whether they are going to go for a baccalaureate degree or not. Those are some of the things we are taking a look at in Portland. We do not have some lead time but it is drawing to a close very quickly. Twenty years ago who would have thought that the space industry would be a major industry in the United States. Today it employs over one million people. What kind of a program does it take? They have been doing most of it themselves. Industry is putting about as much into education as the public education is over the United States. These are some of the things that industry is beginning to question. This is one of the problems that we have in Portland. Tomorrow, we have a very serious election coming up. We lost one on the nineteenth of May, and we have one coming up tomorrow, the twenty-ninth. If we do not pass this one, it is going to cut the guts right out of our education program. I mean it just that seriously. Vocational education is going to seriously suffer because vocational education is still thought of as one of the frills. Can it be a frill, if it affects eighty-eight percent of the population? I do not think so. Unfortunately, the eighty-eight percent is not the group we have reached. They are not the group we communicate with. They are not the group that gets out and supports. We have been dwelling with the biggest share of our time on the twelve percent and maybe this twelve percent may be some of those who ultimately go conservative and do not give too much support either.

These are just a few of the things. How many of you are familiar with the report on the Massachusetts Institute of Technology workshop of a year ago last summer? There were not many educators involved with this. They wanted to get the word from business and industry. They threw the educational system right out the window and started all over because they said it is not up to the times, but now, what can we do, what are some ideas? I am only going to mention some of mine. First of all, when I went to Stanford University on an advisory committee, they wanted us to develop a flexible schedule for vocational education. They said that many of the kids that do not get into the vocational program could get in and many of the kids who get tied down in vocational education could get some of the other education, too. Two things, in my opinion, precede any scheduling because scheduling is a matter of wrapping it into convenient administrative packages. One, determine what you need to teach, train the staff to teach this kind of content and people; and then determine the kind of package to wrap it in.

We generally start with time and then wrap everything else around it. I do not believe in two by four by six education, between two covers within four walls, within six periods a day. I do not think that is a kind of educational pattern that is going to take for the future. When business and industry gets involved, you are not going to have that kind. There are some examples where business and industry already have been involved; distributive education, and the work experience program are two of these and some of these programs are extremely strong.

What do we have going in Portland? I do not have anything particularly outstanding. We have a fine technical high school for boys, about half or a little over half go on to college; the other half go to work or in the military. The school is extremely well received in Portland; it is thought of very highly. We have a girls technical school which enrolled about five hundred girls but it is not on the same caliber as the boys program. The programs appeal to a different level of student. One of my recommendations is to merge the two schools because jobs are no longer determined today on the basis of sex except for a few of them. In fact, I would not question that maybe the program is illegal because you can no longer discriminate on sex on jobs. Look in the newspapers, jobs of interest to women, they do not say women only anymore. Jobs of interest to men, I do not know how you can continue to try to promote this kind of thing in school because we are living in an age when women and men are involved in some of the same occupations. They are no longer pure by sex.

Another thing that we have underway is one I am only indirectly involved in. We wrote a proposal; it has been revised several times. The name is PEP, Personalized Education Program. What is it? It is a junior version of a localjob corps, a remedial kind of education. It is to satisfy some of the kids who are sit-ins, some of them who have already dropped out and we have got a new wrinkle, it will be co-educational. It will also have residential facilities for unwed mothers. Don't think we won't have problems if it goes through. We were well along but we had a little problem on securing a site. Now what is this? This is a program to take care of educational failures. We are only taking a very small group; we are looking at about fifty unwed mothers, one hundred students, both boys and girls at the junior and senior level with some of the kids in the 14 to 16 year old bracket. I look at this as remedial education; it is not just vocational education. One of the clues for the future in education is an approach that has already been tried and we are finding some success with it. If you want to tie it down to discipline let us call it the interdisciplinary approach, making education relevant.

Jerome Bruner, in Process of Education, talks about fragmentation. The thing is to try and get rid of the fragments, get rid of the things that are meaningless and put together the meaningful fragments into such a package that the student can relate them to one of the most important decisions that he is going to have to make in his entire life, and that is his job. Bruner states, "Man's social position is determined on the basis of his job." These are some of the issues we have to meet headon, as far as really improving education and including vocational as an important part of it, for most youth, the most important part.

When should it start? People from the Massachusetts Institute of Technology workshop said start at kindergarten. In fact somebody said, Project Headstart is the beginning of vocational education because you are beginning to prepare people to get an education that is ultimately going to wind up, we hope, in a job for them. There are other problems that are associated with this, one discussed this morning, is the racial problem. It goes right along with this thing. We are frustrating kids with the amount of decisions that they are going to have to make and they are not capable of making them. To cite a case let us take a young individual, sixteen and not graduated from high school. I do not care what his race, creed or color. When he comes over to the Youth Opportunity Center and is interviewed, what are the alternatives open to him? Let us name a few, apprenticeship, job corps, neighborhood youth corp. There is no coordination whatsoever between the different agencies in the program. You tell the kid, "Why don't you go over to the Apprenticeship Information Center; it looks like you could meet some of the standards in the trade." So he goes over and he meets the standards in the sheet metal trade but the sheet metal trade committee does not meet for four months. What is he to do in the meantime? There is a frustration. We have to look for something else. Maybe four months from now he is called and in the meantime he has another job. He had potential in this one area but he never gets into it because of all these other problems.

These are the kinds of issues to which vocational educators are going to have to give leadership. I hope that we convert more of our academic friends to looking at education as a total picture. I will say this; we are not going to do it as long as vocational educators meet as pure groups and we talk among ourselves. I think that as a result of a workshop of this type, you can go back to your own community and share some of the ideas you gather here. If for no other reason, you are reinforced knowing that other people are thinking about the same thing.

Principals are talking about vocational education. How many principals know anything about it? We have the academic side of our educational picture. We have a lot of people who have never done a days work in their life other than education. There is only one way that I know that you get any experience in the industrial world, and that is to be out in the industrial world.

The three years I spent with Northwest Airlines were the most valuable because I had to learn to get along with people. I had the most difficult situation to handle that I ever had to handle in my whole life while I was working with them. I had a chance to get on labor management negotiations because this was part of a negotiated contract. We had a chance to meet with prospective employees. We had a chance to follow those employees once they were hired. Once they were referred into training programs, we were testing where we had a chance to see the results of skill and knowledge preparation and its application to the job.

In looking ahead, I would like to see each of you analyze what you are doing in your local community to get closer involvement of local business and industry. There is a tremendous amount of talent. I heard a fellow from Associated Industries say "We can give you money and get you off our back, but there is one thing that you cannot buy, and that is brainpower." They will give it to you free if you just ask for it. I had one of our own supervisors say in a meeting, "Business does not know anything about education." If they do not, how in earth are they doing some of the things that they are doing? Boeing spends about twenty-eight million dollars a year on education. United Airlines spends millions of dollars a year on education. Every single company does. I came back to a supervisors meeting after I had been to a national convention; we were in a large group and I said, "There is a real threat out here on the horizon and we can take it now as a threat or we can sit back and wait.

That is packaged education developed by business and industry and it is pretty close to here." Dr. Mager has worked on a lot of it, he has worked on all kinds of it. They know the work. They are going to take and put into practice the most modern technology we have and apply it to educational fields. We also have to look at technology in the trades and industry fields. We are looking at a terrific shortage of qualified teachers within the pay range that education can afford. I think you all recognize this.

You have two choices. Either pay more money to get them or try and substitute using one of the technical developments that are occurring. They are here and they are cheaper than teachers, much cheaper. We talk about an investment of $78,000 in programmed instruction but you only pay it out once. Those are some issues that we are going to have to face in the future.

That concludes my comments. I hope I have not bored you with what I have had to say and I would be very happy to try to attempt to answer any questions that you might have. A lot of these questions do not have answers as yet. The answers are still in the formulation.

AN ELECTIVE HIGH SCHOOL PLAN

Gordon L. Quick*

May main objective is to explain about the elective high school plan that we plan to begin using at the Education Center, Clover Park School District #400, Washington. To set the stage, let me say my views are not necessarily those of the administration of the Clover Park School District so feel free to challenge them as you see fit.

Schools exist for only one major purpose and that is to help people perpetuate, develop and improve themselves their environment, their society or their culture. Our primary concern today is with identifying, organizing, and presenting information which will constructively develop the talents of people and also fill the needs of our society. We have a number of indications that our school systems have been quite successful in helping people to increase their knowledge and develop their skills and talents. Some of these are indicated by our life expectancy, our gross national product, per capita income, percentage of total employment and if we get into material things, the number of T. V. Sets and automobiles. Also there are a number of indications that our schools are not successful, that thirty percent of our students in this nation do not complete high school. We have a proportionately high percentage of youth between seventeen and twenty-one who are unemployed primarily because they cannot offer a potential employer any particular skill. We have a lot of institutions, organizations and various programs and projects picking up the remnants behind our public school program. Some of these are the job corps and the youth corps and MDTA projects, the Economic Opportunity Program and even the Good Will Industries. We have a lot of agencies picking up the remnants, the dropouts, the fallouts, the pushouts in our public school system. If we look carefully at these indications that we are not quite succeeding the way we should, we who are involved in education and especially we in vocational education and curriculum development, need to take a long hard look at what we are doing and then make some plans as to what we are going to do.

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I want to hand out some information that I have written down primarily as an aid to help me solidify my thoughts in trying to sell this overall concept to the school district Board of Directors and administrative staff. I will not degrade your integrity by reading it to you but you might glance through the first two sections, namely, the problem and the challenge. Here are a few ideas to call your attention to what we are actually faced with.

In trying to identify the problem and the challenge that is posed to us in vocational education and especially in curriculum development, it seems to me that we ought to draw certain conclusions. One, some of the educational experiences that we are presently providing students may not be appropriate to the needs of our students or our society.

Two, possibly some of the educational experiences which are both vital to our society and rewarding to the student are presently available, but our students are not being guided into them. You might have the best course in electronics but if the guidance counselors do not have any personal respect for anything but college degrees, and do not understand the world of work, then this program may not be effective.

Three, maybe we are offering all the necessary educational experiences but they are presented in such a way that they are incompatible with the interests, aptitudes and abilities of students and the values of our society. In other words, the mere label on a course that you may be offering in your vocational school might make a difference as to whether students get into it and then if it is not presented in the proper manner, the students may not place any value in it and your industry which you are training for may not accept them.

These things may be part of our problem in curriculum, course organization, type of presentation. We have spent millions of dollars in identifying the dropout. We have pegged these people as to who is going to drop out and what kind of characteristics they exhibit. We have identified dropouts; the welfare people have identified the non-contributors to our society; the Department of Labor has identified those who would like to support themselves and contribute to our society. The same department has determined the type and number of employees needed at present and to a certain extent made a forecast of those that will be needed in the future. We have statistics on the number of students who will be progressing through our schools; we know who will be coming through and at what rate. We have significant data that we need and now we better stop cutting bait and start fishing.

When we start fishing we better be aware of Hayes' Law and that is that there is no such thing as a simple answer to a complex problem. We can approach this problem in a couple of different ways. We can continue to offer the same courses in the same manner and get the same results, but when we do this we better be prepared to expend a lot of effort and time in developing clean-up programs such as our MDTA program, our job corp, our youth economic opportunity center, all of these things. Remember the federal government will take over where the local communities fail to realize the problems. If we want to do this, the same way, the same manner, the same courses, we have to be prepared to send more and more of our money to Washington and have it returned to the local communities in special projects and designated for special purposes. We can take this approach, do it the same way or we can try and do something different. We can find some way of providing educational experiences which are appropriate to the interests, aspirations, abilities and also fill the needs of our society. We at Clover Park have been searching for and looking for a way to do this and we settled upon what we call the Elective High School plan.

The Elective High School Plan is primarily in the form of preventive medicine. We can approach this thing in two different ways; we can cure the sick person or we can prevent him from getting sick. The Elective High School Plan that we have decided on is preventive medicine. Whether this plan is appropriate to your school system, or whether it is not will depend a lot upon the particular school system in which you are working.

In the handout is a statement of philosophy of the Clover Park School system and it is not much different than you will find in any school district. We have seventeen elementary schools, three junior high schools, two senior high schools and one area vocational technical school commonly referred to as the education center. The area vocational technical school is under the direction of the Clover Park School District which serves seven high school areas in the surrounding vicinity. The Clover Park School District is federally impacted. We have Fort Lewis and Ford McCord, both located within the boundaries of the school district. This has quite a significance for our vocational technical school. We have a low property value per student at Clover Park, $4,000.

I would like to call your attention to a drastic change that occurred in our district. Remember that $847 for federal impacted area. It was intended that we get our state reimbursement plus the $847. Now the state legislature came and said if you get $847 then you get that deducted from your state reimbursements. We are back with the poor people now. We are not collecting funds from both sources. We are located just south of Tacoma. Our school district is seven miles by seven miles. We have primarily middle class people there, or middle class goals. What is the middle class? That means the difference between one car and two cars or one T. V. and two T. V.'s or 1700 square feet and 1200 square feet. A better idea of what the middle class people are is that they have too much money to be poor and not enough to be rich. We have approximately 9,000 students in the school district. We have no heavy industry to support our school. As you will see in our bulletin we offer at the vocational technical school twenty-seven different occupational courses, twenty-five of them vocational and two technical. The two technical offerings are electronics and data processing. Fifteen of the vocational offerings are open to high school students. High school students are eligible to enroll in grades ten, eleven and twelve. Our success is not very good with tenth grade students but we do take them in special cases. Approximately 250 of these students attend on a half day basis. In other words they attend regular high school during the morning and come to the vocational school during the afternoon. We have only two of these courses in which we have admissions testing. The rest of our admissions are based on a student's interest and an interview by the instructor. The fees include a ten dollar registration fee; no tuition is charged but we do have lab fees which vary according to the materials and the supplies needed in each individual course. The reason we are looking at this Elective High School program is that we are trying to find a better way of serving people. When we talk about people we are not only talking about the students in the two high schools, we are talking about the people in the military, the GI's that do not have a high school education. We have a lot of retired people and retired military people in our area. They have gone through twenty years and they find that just because they are a Specialist 3 for the battalion or majors that they do not have a lot to offer society or their employers in the way of skills. We get a lot of retired military people coming to our vocational-technical school. We have transportation problems between the two high schools and the vocational technical school. We have one high school that starts a half hour before the other one. We have a certain amount of chronic conditions that occur in both of our two high schools, Lakes and Clover Park and the dropout rate is not significantly below the national average. One of the reasons, I think, is that the military people as they bounce around the country tend to gravitate to different places from France to Germany and all over the country and some turn out to be darn good students but then, if they cannot stand all of that bouncing around they lose interest because they are transferred in the middle of the year. Some of you that have military people in your area might find that same thing.

We have spent a lot of time developing the two high school programs that we have at Lakes and Clover Park. We have good programs there. We could start a third high school at the education center very easily, a third high school of the same type and vintage that we have in the other two schools. It would be easy. It is not difficult to do the same thing we have been doing for years and plow the same furrow but we decided to try something different. Maybe we can do something for this thirty percent that just are not compatible for the system. This is the reason why we have the elective high school plan. You might start looking at the handout. After you get through the problem and the challenge, you see some of the facets of the elective high school.

This is the plan as we see it. You may be asking where we got the educational concept, we got it from a report that we read which was a summary of an institute similar to this which was held at MIT under the supervision of Ned Frank. As that group looked at it, they viewed it as a pre-tech program for the seventh and eighth grade students. It was not designed to use the way we are trying to use it; however we liked the concept.

Basically what we are trying to say is this, here is a specific vocational area, we may say landscape gardening, we may say electronics, we may say commercial aviation. We know that in each one of these particular vocations, we are responsible for teaching math, English and any of the other general academic subjects that a person needs to succeed in that vocation. We only teach what he needs to know in vocational education, not what is nice to know. Generally in vocational education we think of just what he needs to know. What we are attempting to do is take this vocational interest on the part of the student and surround it with the specific academic subjects. The academic subjects that a person in grades eleven and twelve needs to know to be not only successful in his community, but what he needs to have to be successfully involved in vocational education. In other words, this may be the economics, the labor aspect of social studies, these are the things that he should know to be well adjusted and oriented in this vocation. We will say electronics, a student elects to take electronics at the vocational technical school, Clover Park, at the same time he will receive the academic courses which are appropriate to his particular area. For instance, we may have social studies, U. S. History. What we are going to try to do is run a thread of the Henry relays and the development of the vacuum tube and the development of electricity in general and the whole electronic theory through the U. S. History course to capitalize on this person's interest in electronics. This is the key to it. We are trying to run a thread through each one of these things. The social studies area is the area which is the poorest one to adapt to this particular concept. If I go to electronics and English, this portion relates to the particular vocational area, the technical report writing facet that goes with electronics. If you are going to study a sentence, it might as well be a sentence about electronics as it could be about the cow running over the hill. Something that is meaningful that this guy can put his teeth into. If you are going to write a paragraph, you are going to punctuate sentences; if you are going to write a descriptive paragraph, a lot of these things that we are teaching in English can be related to this thing; thereby we capitalize on this guy's interest. When we come over to math, this of course, will be quite heavily indented because math background is essential for the guy who is going into electronics. It has to be. We go into calculus in the electronics requirement.

One factor that I do not want you to forget is that when you try to incorporate this type of system and this concept in a normal high school framework and let all of the other regular type of high school develop around it, this is going to be tough. This is why we want to put this third high school in our education center which does not have the traditional background because when you are bucking tradition, it is a tough old battle. We will have some science, boy's and girls glee and P. E. involved.

A question about how do we teach this. When I was developing plans for the staffing of this we were going to take the electronics instructor and the head of the learning center and the head people in each of the fifteen learning centers and develop a cluster of them where enrollments do not justify it. We might have to have offset duplicating with commercial photography or commercial photography and commercial art together, group these occupations in clusters and then develop from this standpoint. The learning centers, then, are scattered throughout the campus. The academic instructor is responsible to see that this person gets all of the requirements in the math area, he simply supervises this area. The vocational instructor will not be confused with something other than what he needs to teach the student for succeeding in a vocation. He will not be teaching something outside of his realm. He will be the expert in vocational education and do not get him confused. He will teach what he would normally teach to any adult who came into his program. The responsibility of the people that we pull in will be more or less supervisors and experts in each one of the academic areas such as science, math, English, Social studies.

We have talked generally about the total program, where it has been tried and what are the problems that they ran into. Some of these are they cannot hire staff members flexible enough to understand this particular curriculum design. The real shelter that we have in academic education is a fifty-five minute period in which we do not have to coordinate and check with or develop with anybody else. This is considered to be an extension of, for graduation purposes, for activities purposes and for all intents and purposes the two present high schools. We would like to have this program designed as fail-safe. In other words, if the thing falls flat on its face, we can always revert back to the usual high school program.

Then, the learning center, the key to this particular concept, will primarily be those facilities which are available at the present time to the present vocational programs that we have. When we talk about defining educational objectives in each area, if you get your teachers to sit down and write out fifty specific objectives for his course and represent them in performance terms you have it whipped. Most vocational instructors do not write easily; they are pretty good doers but they do not write easily and writing objectives forces them to. The objectives are the things we teach toward. We do not line up hours; we do not say that you exist in the U. S. History course for a period of 180 hours per year. We teach toward objectives and I think this is one of the soundest things that you can teach toward. If it takes fifteen minutes to do a one hour job for the normal instructor, use fifteen minutes and get on down the road. We do not believe in grade levels. We found that you can take people fifty-five years old and put them beside high school students. We measure in performance terms. This means that when a student is ready to progress, he can go ahead.

In conclusion let me illustrate the operation of the elective high school concept by describing application of the concept to an MDTA project training individuals at least seventeen years of age. These individuals require both basic education and vocational training. We use a teaching team, with teachers from seventh and eighth grades and vocational specialists. In this way we blend basic education to the vocation for which the enrollees are training. For example, when they work problems in percentage, the problems mean something to them. When they write a sentence it relates to something in which they are interested. We attempt to overlap occupational adjustment and individual adjustment, with our team also having responsibilities for guidance counseling of the individuals in the training area. We have six occupational cluster areas in which the training is given. We have found that the dropout rate is less than in projects which had enrollees complete basic education before going into vocational training. In the MDTA project, then, the elective high school concept is being used. This concept which we propose as an alternative to the traditional high school program calls for a centrally located learning center, in which math, English, and social studies are coordinated with vocational training by a team of academic specialists and vocational instructors.

FLEXIBLE SCHEDULING FOR VOCATIONAL EDUCATION THROUGH COMPUTER USE

Jack McLeod*

I thought today I would take a meandering course through our flexible scheduling. There is danger in doing what a friend of mine did when he read Moby Dick and said he found out more about whales than he wanted to know, I hope that I do not tell you more about flexible scheduling than you want to know.

In 1957 staff utilization studies were in progress. Out of these studies sponsored by the National Association of Secondary School Principals, came the idea of staff utilization, that is, of team teaching and of differing modes of instruction, for example, to have forty percent independent study, forty percent small group and twenty percent large group. One of the gentleman espousing this concept was on the Stanford campus, and a question was raised by Dwight Allen. "How do you go about scheduling this kind of program?" Dr. Allen commented that to take a 5-day week and devote Monday to a large group, that is twenty percent; Tuesday and Thursday to small groups; and Wednesday and Friday to independent study would be artificial and would mean a lockstep for everybody within those programs. Dwight Allen followed up this conversation by going to an industrial engineer on the campus who had done some scheduling in the engineering department by computer. He asked, "How would you go about building a school schedule through a computer?" Dr. Allen went back several times and talked to him. Finally Dr. Allen intrigued him and decided to find if there were some mathematical rationale to developing programs the way administrators build schedules. They looked over the shoulders of a number of administrators as they built their school schedules and found that building a school schedule was somewhat of an irrational process. There seemed to be no real design to it; rather a lot of cutting and patching. The best test of what this years schedule will look like was to look at last years. They found some mutation but it looked a lot like last years schedule and it kept perpetuating itself.

Then Dr. Allen and his colleague from Engineering worked up a computer program that looked sound enough to take a crack at the real world. They "conned" five school districts, five school administrators, into putting their professional careers on the line by agreeing to try the new approach for a year. They built school schedules for the five schools; they were monstrously bad schedules. School was to open on Tuesday. Monday is Labor day. The teachers came on Wednesday the preceding week and there were about 400 conflicts. There were three days to get ready. It was fantastic. How do you break conflicts? When you are breaking conflicts in a regular schedule you say, if I take the student out of second period algebra and put him in fifth period algebra then I can plug in the . . . . you know that approach. But, when you are talking about the kind of pattern we are talking about in flexible scheduling, it is bad news. At any rate, schools were opened and people did survive. We are now scheduling one hundred schools.

The developing of the flexible scheduling itself was underwritten by the Ford Foundation. The idea was that when it was perfected it would be put out in the field so that other universities and companies could start building schedules for schools, using our programs. One decision made in the beginning was what kind of language should the program be written in. There are different computer languages just as there are different languages in different countries. The language chosen to develop the program was the kind of language they thought was going to be the international computer language five or six years ago. It turned out that this kind of language was understood on the Stanford campus only. Presently the program is being rewritten in an international language and a year from this fall it will be released to a number of universities that are interested in using it. Nova University in Florida, University of Iowa, Michigan State, University of Massachusetts, University of Oregon are waiting for this to be completed.

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At the present the one hundred schools we are scheduling and that is the maximum number we can handle since we are an educational institution, not a service organization, are schools in Japan, Hawaii, New England, in the South, with most of theschools on the West coast.

What we know about flexible scheduling at this time is that it is a viable process. It is no longer, "Will it work?" but "It will work!" The question is now, "Will it work for my school?" This is a different kind of question. Any schedule only has meaning in its local context. To think that you can graft educational solutions from one place to another is just nonsense. They do not work that way because your community is different, your kids are different, your staff is different.

In 1967 when the Vocational Educational Act came out it placed great stress upon flexibility within vocational programs. As a spin-off from our main thrust from flexible scheduling, we decided to see what might be done with vocational schools that have extensive vocational programs employing the same kind of techniques we had used in general flexible scheduling. We applied for a three year project from the U. S. Office of Education. The U. S. Office said instead of three years they would give us one year to find out what we were talking about. They said if we made that year an exploratory year and revised the proposal to come back and tell them what we had found, they would consider it at that time. We did that.

We found that what we had known about education was even more true about vocational education. At least it was more obvious. Time has had a stranglehold on curriculum, and curriculum seems to be a two and three hour Smith Hughes variety of courses with performance too often based upon time. We found such things as 1200 clock hours of carpentry. One of the questions asked was if there were different kinds of hours when they said clock hours. They were talking about sixty minute hours although most of these school periods were not sixty minutes long. Regardless of how proficient the kid might be, you put in this many hours because of state licensing or apprenticeship programs or whatever. We found that the time is critical in all education, we say that a child ought to be seven before he starts the first grade. Time is the deciding factor.

In Ohio teacher training one has to spend seven years in a vocation or seven years as a journeyman in the trade, before he can be a teacher in vocational education. It does not make any difference if after three years you are ready to be teaching. Time has a stranglehold on getting teachers in. Outside of the vocational education curriculum there is the probationary period. It does not make any difference how good one is, one must go through the probationary period. There are some people that should be boosted several rungs on the salary schedule according to their abilities, but time, once again, has this kind of stranglehold.

Another thing we found is that schools labeled comprehensive were academic high schools. What vocational curriculum there was had been vaguley defined or else on the periphery of the curriculum and had little impact on the kids who were going to school there. We found that there were not very many comprehensive high schools at all. At the end of the first year of the project when the review board had an on-site inspection, one of the things they said is let us get some truly comprehensive high schools in the project. Several State Directors of Vocational Education were contacted in various parts of the United States to attempt to locate some good comprehensive high schools within their states. The State Directors of Vocational Education without exception were very much in favor of the idea of getting away from the time criterion and trying performance criterion. On the other hand, for them to point out good comprehensive schools in their state was not so easy. There did not seem to be many comprehensive schools, that is, schools that offer a program for all kinds of students in the United States.

Another thing we found was that some of the programs in schools were preparing kids for a world that does not exist any more and I am not sure ever did exist, that is, the curricula were designed having no articulation with the community at large. They were not using local advisory committees as some of your people do.

What we were trying to do in the second and third year of the project was to try to get people to define performance in terms of outcomes, behavioral outcomes, rather than to plot orientation. There are people in each of the schools writing performance criteria. It is a very, very time consuming job and to say to the ordinary teacher, or the extraordinary teacher, teach your classes and also write in the evening or on Saturday morning or Christmas vacation simply is not enough. This patchwork approach to developing curriculum will not do, because it is extremely demanding. The people in our schools are trying to start somewhere. The toughest thing in the whole job is trying to get the process down and then doing something about it, trying it out, revising, seeing how it works. That is what they have been doing partially this last year. They are doing it this summer. They will try it out this fall and then come back together again to see how it works.

Let us return to what is meant by flexible scheduling. We are talking about using teachers, facilities, students, the curriculum, in the kind of an educational mix that will turn out the kind of student in June who differs from what he looked like in September. In most educational secondary programs, or junior high programs, or college programs, we could say to a youngster, taking the curriculum in general, can you speak French? He will say, "I have had two years of French." Can you type? He will reply, "I have had two years of typing." You see, the question has not been answered. You may have had two years of French or you may have had two years of typing but the question is, "Can you type?" We do not care if you put in from September to June for two years in a room where there are some typewriters. We want to know, "Can you type? Can you use the spacing bar?" Can you do these kinds of things, kinds of things that we can define, measure spell out. These are the kinds of things that we are trying to get our people to look at and we feel that once they decide what they want, the youngster will look at it. I have indicated earlier to use your advisory committee to help arrive at what the youngster should look like.

We do not feel that we have all the answers, one thing gained from this experience is that you are going to give me some feedback to what we are talking about, some kind of feedback on how you think that our program might be strengthened or how this might fit according to your personal experience. We think you should tally all the resources you have and try to come up with some kind of an educational design. When we first started out, we put in the schedule, and we were concerned primarily about how it would work. However, if you just change the schedule and that is all that changes you might just as well paint your building a different color. It will have about zero impact on what happens there, unless the teachers change. That is the big thing. Most of you will be change agents, trying to effect change. After you decide what you want the kids to look like, what kind of staffing patterns you want to use, how you want to use time, how you want to use facilities, what should be taught, all these kinds of decisions have been made, then you should say, "How can I go about scheduling this?" Scheduling is the last thing. It is the tent that goes over. It is the kind of thing that allows you to do what you want to do. If we build a schedule first and then start cramming students into pre-determined patterns, we are right back to where we started. We are right back to fitting students to schedules instead of schedules to students. In our opinion it is not the way to operate and I am sure you would agree with that. We feel that in vocational areas there is a certain amount of teacher oriented showing and telling going on. Throughout the curriculum there is a certain amount of showing and telling and why not do this showing and telling to as many kids as possible.

Dr. McCloskey talked about occupational clusters. We believe, we have a hunch, at least, that within occupational clusters there is no doubt a general body of information that ought to be shared with all students in that particular area. Because we know students are going to change jobs maybe two or three times in their working life, they probably ought to have a broader picture of the vocational area that they are going into, so they will be more adaptable to change. This broad area could be shared by all students. You can have team teaching that is cross disciplinary. For example, we were talking about an automotive teacher and an electronics teacher coming together for common presentations and then going on with their separate work after that. This is the large group then. Some things we know about large groups. We know they ought to be no more than about thirty-five minutes long. Pouring information into a student's ear as we do now for fifty-five minutes just is not a viable way to instruct.

Beyond that we feel that there ought to be, and certainly vocational education has no quarrel about this, labs. But, how much of the lab should be structured? Now they are structured to fifteen hours a week in some courses for all the students. The student is in there for fifteen hours a week or whatever it might be, ten hours a week, for several periods a week. We feel that we ought to try individualized instruction. Some students probably need to be in there three hours a day. Some students may need to be in there one hour a day. Some students may need to be in there four hours a day, but why not try to fit it to the students own learning style, to the kind of expertise he brings with him. We also feel that sometimes in curriculum areas, teachers tend to start believing that all students are coming in at the same base level; they all have about the same amount of information. That is not true. Some know a lot about the subject; some know a little bit about the subject. Quite often we tend to teach all of them as though they know about the same about it; therefore, part of this package is a pretest.

On the pretest, let us find out what he knows. In one class in one of our schools, we had a chemistry teacher who gave a pretest to begin the year. One boy came up with a 96. What do you want him to look like at the end of the year? What do you do with a boy like that? Maybe you say to him, "Keep quiet, you have your A. Do not rock the boat." That is one approach. You can say to the youngster, "Get out of the class." The decision we would tend to make is keep him in. What is being done here? He is going to junior college, taking some college chemistry and coming back on a research seminar basis with the chemistry teacher one day a week, just kind of talking about how it is going. He is getting credit for high school chemistry as well as college chemistry. We ought to do this kind of thing more often. Find out where they are and plug them in. We were talking about a ladder of skill, maybe in a sequence, maybe not a sequence. In some areas you need A before you do B, before you do C, before you do E, this kind of thing. Sometimes you need A, B, C before you do E or D but the order in which you do A, B and C really is not important. It is just that you have to do these things before you get into something. We think maybe you ought to plug students in where they belong. Some kids are half way up here and some are at the bottom. This means that the teacher becomes a resource person and we feel that this is the role that the school is moving towards, with the school a resource place and students able to work at their own speed, their own learning style. Some students, for their learning style, need a lot of frustration, apparently. Sometimes people say that unless there is some frustration, learning will not occur. I think with some students the trauma should be as low as possible. Most will do well, some do need to feel worried.

Let us say the youngster gets through and there is a month left in the semester. What if the youngster does not come around for a month? What if that is an option and he takes it? Basically, youngsters who get through a month early, what kind of youngsters are they? These are the ones you have to "keep out" of the shop area. They love it. Most of them will come back and do more work. We feel that they also ought to have the option of not coming back if they do not want to. Let them work on their English or go sit in the student lounge and have a coke and talk to some people about whatever they want to talk about. This, of course, comes out of the independent study time, the unstructured time within the school.

We feel that some of the kids time ought to be for small group work. We think that is true in every area of the school. The youngster ought to get together with others and defend points of view, have an abrasive effect upon each other, be willing to take stands. They will become employees. A number of surveys have been done about why people fail in jobs, interpersonal relationships. This is not so much because they cannot fix the car but because of these interpersonal relationships. This ought to be the responsibility of all areas of the curriculum.

We have run into some kinds of problems. There is one state in which we have a school that the State Director of Vocational Education would not fund if they broke the time hour block. For one year they went without state funds. They were not reimbursed. This is an exception. In New York, the regent's exam was an obstacle we ran into. Another obstacle we ran into is state liscensing boards, those not part of the State Departments of Education. In another state a cosmetology board would not allow them to cut one minute from the forty-five twenty minute sessions a week or fifteen hours a week. In fact, they wanted them to add more time because now wigs have come in and girls have to know about wigs and how to fix them and clean them. In almost all areas the curriculum is expanding. The talk is about more time. One cosmetology teacher in one school admits that some of the students are ready to go in much less time than the required number of hours. It does not make any difference; you must have these hours before you take the test.

Sometimes the administrators say to us, "Come down and tell us what flexible scheduling is all about." I talk about independent study, talk about having a third of the day unstructured. Administrators almost pass out. They see their career going down the drain and their kids are going to be all over the school smoking and out in the streets hotrodding their cars. There is a lot of trauma in change. The kind of change that we are talking about is not the change in PSSC Physics or Chem study or SMSG Math. This is the kind of change that affects everybody. It is like throwing a rock in a pond. The ripples reach everybody in the whole school, every kid, every teacher. There is a lot of trauma. Change comes slow and hard to all of us; that is the problem. You do not know until you take a whirl at it or make some radical changes within your present operating system.

We generally find that schools can handle about twenty percent more kids. You do not get twenty percent more kids, but that is the kind of room you should have. In some areas we are talking about three hundred kids at a time in a large group. If you want to design some general vocational courses, they can come together once a week for writing up interviewing techniques or union activities or social welfare or whatever you want to talk about to youngsters who are going out into the world of work. Things that you think kids should all know about. Let us say that you have two hundred fifty together in a large group; you have cleared traditionally five classrooms, or in a vocational area maybe you have cleared more rooms than that. You can certainly use your facilities in a much better fashion.

I said some things with which I hope you agree. I have said some things with which I am sure you do not agree. Let me end now, and at this point we can open this up for discussion.

OCCUPATIONAL PREPARATION OF INDIVIDUALS FOR WORK

Pat H. Atteberry*

I am pleased to have a part in this program. I would like to do a couple of things this morning. One would be to cause you to think somewhat outside the framework of vocational education. This has been one of the problems of vocational education, that we have been so busy at our job and looking at our job, that we have not paid attention to what is vectoring upon the problems of vocational educators. One point of view is that no significant facet of our society has paid any attention to vocational education except in times of crisis. You can look at educational textbooks, you can look at writers from outside the field of vocational education, and you will not find more than a few paragraphs in education books on vocational education. Primarily we have been a group unilaterally concerned about this and primarily our writing is confined to the writing that has been done by vocational educationists themselves. That is up until the very recent times; then this bears out the contention that I have that we are only concerned about vocational education in times of crisis. Some of you have concrete evidence of that in your shops, in that you have machines that were given you at the end of World War I. Another major portion of your equipment were either left over from some government program, the NYA, or World War II, in form of war surplus. We have not been concerned, either the professional educator or society in general, has been concerned about vocational education, except the professional vocational educator. All of a sudden we hit a crisis. We hit a people crisis and we hit it in our youth and we hit it in a group of unemployed people. This becomes a concern of our national government; it has become a concern of everybody. Everybody from the top in the federal government on down to a garden club meeting must have a vocational educator to speak to the group because there is a national concern. This is national concern. We hit a crisis situation and the demands on vocational education are over-whelming at the present time.

The problem existing is that we do not have youth. You can hit a crisis situation, or you can say, "Let us do this tomorrow." But, we have not had financial resources or had a place in education to prepare people to meet the crisis; so they said, "Do something tomorrow." It takes legs to do things tomorrow; it takes people. We do not have the people and from my position at Oregon State University, we will not have the people for ten to fifteen to twenty years. This puts the problem I believe somewhat in perspective. Let me point out one fact to you, in 1965 and 1966 there were eight doctoral candidates graduated in the United States in vocational education. I know of twenty universities looking for a man, and we're one of them, with a doctorate in vocational education. I heard you talking about research a while ago; we need a doctorate in order to supervise the research of our doctoral candidates. Eight in the whole United States, and I suspect that there are jobs for twenty-five at the doctoral level. This poses a problem.

I would like to take just kind of a trip outside of vocational education here for a moment and attempt to form a background of some of the influences upon vocational education. Primarily up to this time, man has been concerned--and we as a western world have been concerned--only with the hardware aspects of our society. Primarily we have been concerned by overcoming the natural resources and building machines to make products to sell to people to satisfy wants. We've accomplished this task. We've done a good job here. But there has been very little done about the study of man so that we may understand him and develop man as an individual. The complication here is that we have done such a good job with hardware; we have done such a good job with things that can be scientifically treated by the scientific approach where we can count people and count noses; we can by mathematical concepts with computers, we can shoot on the moon and land an instrument within a few feet of the place designated. When you deal with human beings, you deal with a thing that is unpredictable. One of the reasons that I believe that we haven't worked on the problem of a human being is because this other kind of an activity is easy to work on; and we have only done research in the area of things that are easy to work on, the things that can be mathematically treated and predicted. You can plant a stalk of corn. You can crossbreed it with some other stalk of corn and you can predict pretty well--if you can find all the necessary sort of things--you can predict what kind of ears of corn is going to come out of this. You cannot take a youth or an individual and predict, because he's always reacting to what is happening to him. He may change his mind at any moment; the individual is unpredictable. We have done very little study in predicting what happens to an individual in the area of vocations alone. We have not studied, except for a few isolated cases, the career development process of how people take a job, how they get a job, what causes them to be motivated to work, or even go to school. So you can plan-- vocational programs and build--facilities and still youth will not enter your school. Even if they enter your school and seek training, they may not take the jobs that they have been trained for. Then this presents a very difficult problem. This means that this is somewhat outside the realm of vocational education, but it must be understood and studied by vocational educators, and that is why individuals are motivated to work and all of these influences that vector upon an individual in taking a job and persisting on a job. These are difficult studies; this calls for a thing that has become current now and I suspect that you have some of that here--and that is the interdisciplinary approach to the study of vocational education. Almost, I would say that we have right now an outerdisciplinary research of other people more concerned about it and working on it more than we are ourselves as vocational educators. Vocational educators have the ability to do research. If research is done, meaningful research, it will be done by vocational educators, because they understand the problems of vocational education. They are in it. I would not negate at all the interdisciplinary approach where vocational educators are taken into the problem. But unilateral studies by people outside of vocational education would take us off into tangents where we should never go.

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Vocational education, even though we have never been recognized as such, is a humanistic study. We have been called vocational education and isolated and not mentioned almost to the extent you would not mention--you know, you'd give a fancy name for some of the four letter words. We're just about almost in that category in that we are never mentioned. We are caught up between two forces--the essence of industry is change and progress, 15 billion for research and industry alone. Almost we would say that the institutionalized essence of education is resistance to change. When you put it in the framework of all the forces that must be involved before you can effect change, the reason that vocational education is a humanistic study is because it deals with man where he meets reality as an individual in most vital concerns. A most vital concern, at least I believe, for most individuals in our society at this time is getting ajob and earning a living. I can give you a specific example. In the United States, in Oregon, or wherever you come from in the Western world, if a male, eighteen years of age and out of high school is not either in full time school or has a full time job, or is in the military service, he is a problem to himself, to his parents, and to his community. Even though the father may be worth a million, he expects that eighteen-year old youth at the time he comes out of high school to pursue either a college education, or he expects him to pursue some kind of a useful job. I would say, not only male; this is becoming the responsibilities of females equally so. This is why I say it is a very vital humanistic concern; because a male is not wanted if he does not have a job or is not pursuing an education of some kind. So then vocational education is caught up between this and one of the problems which was not a problem when the traditional kinds of vocational education were structured is we were primarily a crafts oriented society and a small shop oriented society. Youth learned to work in the community; they learned to work in their father's shops; they learned to work in the small industry where everybody knew everybody. We have moved way beyond that and we are in what we might call an industrial mega-machine age where industry is a very complex sort of thing. There is a sign outside the door, "Don't come in." Youth do not see industry unless someone's taken them on a field trip. They have no knowledge of what goes on inside the gate in the large industrial complex. The expansion of technical knowledge and the degree of specialization demanded of individuals going into this mega-machine, this large industrial complex, requires more and more training in order to function in large industrial complexes. I could just take you to one large corporation where we have a cooperative program. You put a fellow in here as a cooperative student and they put him to work on machines that are worth $230,000 a machine--and it's programmed. They want an individual when they put him on this machine. The put him on there as a learner at first, but if he goes into the cooperative program, they don't have any places for boys with strong backs to lift things. The man that runs this lifting equipment is a specialist. There's no place for a laborer to stay there for a year and learn how the thing runs, and then take over. He must start on this machine. Eventually, he must go through five or six different kinds of machines. They won't even let him in the tool grinding department. A man's been there twenty-three years, and if there is one foul-up it would cost them a fortune.

Individuals, when they enter industry, must have specialized training in more depth, some of them--only those going to the mega-machine or the large industrial complex, need this training. The problem with vocational training is that if we are going to have individuals prepare for this kind of a job, they must be selected earlier and more carefully and given training ahead of the time that they enter the industrial complex.

The complicated thing in the school is, and this is a fallacy, and it's spouted from the roof tops by neophytes and idiots that do not know what is going on in our industrial complex, that all need more training, or in some instances, no training at all because the jobs do not change so rapidly. This is a fallacy, too. Basic principles of job lathes are just about the same as they were when they were developed over 400 or 500 years ago; so this is a fallacy which takes me off on a tangent which I do not have time to deal with. At the same time we have a host of people in our youth that need longer periods of training and more specialized training. We have a whole host of occupations in our industrial complex. You can just ride up and down the street and look at them. And, about forty-five to fifty percent of our people work in these jobs which are menial tasks, small shops jobs, and about forty to fifty percent of our people work in these occupations. The problem we have is that all too many of our youngsters with the ability to work at the mega-machine, or at the higher level type of occupations, are taking the jobs in the menial tasks that they can do without any training; and they are displacing the individual who can only do this type of job. The problem for vocational education is to select this individual who can only accomplish the menial type task and train him for this; and then select the other people that have the ability to function in the large industrial complex or the highly skilled and technical occupations. This is number one problem, what kind of an educational process can you send an individual through, that you can select out those that will fit these different kinds of job specifications. You see, the unfortunate thing about us in the United States is that we live under a democratic form of government. If we had a dictatorship or a slavery, like we had back in the past, this would be no problem. You could just tell people to go here and to go there. But today, you can't do this. Thank God that we can't. When we say, "Thank God we can't," we open up the whole host of impossibles and imponderables, because you cannot force an individual. As I said a moment ago, they change their minds from moment to moment. You cannot predict where they will go nor can we force them to either take an education or to take a job once they have been trained for it.

I think there is one thing, and it is the second thing that might be done in the selective process. This is where leadership comes in. I believe that we can sell automobiles, and they can sell fresh eggs and fresh milk, and soda pop and beer and whiskey and cigarettes. If these kinds of things can be sold, I believe that vocational education can be sold to individuals so they can be guided by proper kinds of programs to where those who belong at the menial tasks and those who belong at the specialization level can be educated to go into the kind of job where they will realize their potential as an individual. We have not identified groups, and this is one of the problems.

Another compounding problem is the group of individuals that should go in the menial tasks group would probably be the last ones to recognize that they belong there. This is a problem of vocational education. We're not solving the problem.

Another problem which industry both curses and couldn't do without is that there is extreme mobility of workers. This is a disadvantage to industry in that it costs something like $2,000 to take in a new worker in most any kind of an occupation--absolute net loss. Yet, how in our western world would you establish new industry in a community if they could not rob individuals from other companies, other industrial concerns. In a way, it is a curse, and yet, it is a blessing because the way that they get workers for a new aluminum plant in Corvallis is to get these workers from somebody else where they have already had experience. This extreme mobility of workers where you can leave a job today and be in Alabama tomorrow or the converse in some respects has created problems but in other respects I think it has provided an opportunity for new entrants, or for individuals to move about from job to job and improve themselves.

We have controls on youth that restrict them from entering the occupational world. I am sure you are aware of the actual controls that restrict youth. One is age, and of course then, you had experience. I did a doctoral dissertation on so-called entry jobs. Even here on entry jobs at the menial tasks, they would say, "Oh, we like a typist to have some experience." Where does the youth get experience? This is the problem. Simulation of vocational education programs in the secondary schools to give the kind of experience so that the youth will be acceptable to industry.

We have moved, somewhat indicating the change that is taking place in vocational education in order to solve the problem. Vocational education itself had become so rigidly set in what we call the traditional programs, and one of the musts in change in vocational education I would say if you could just give everybody a pill tomorrow that could make them forget everything they had ever known almost and start over new that this would be an ideal situation. You could break down a lot of matrixes that has existed between the vocational divisions itself that would allow us to do some things that would be very beneficial to vocational education. I'll just point out a few to you. Primarily home economics up until recently persists in that it has trained women for housewifery. Women are working today; they are involved. Does home economics take on this function of training girls for occupations or do they just say, "No we will not bother that," T and I or business or agriculture can take on these functions. All of vocational education is sitting down together and seeing who can do jobs better or where there are areas of overlap. So internally vocational education itself needs to go through some soul searching and change. Ag has researched itself and automated itself out of a job.

There are demands right now, even for degree people, in the area of graphic communication in industry. You see, we've had wrong ideas all the time about the Industrial Revolution and I don't even use the word, because it's so misunderstood. Some people think this was when the steam engine came puffing down and the water mills began to use power. This concept of power to power mills was back 5,000 years ago. It was not these things that precipitated the Industrial Revolution, but it was a new method of organization; and primarily, the horse that it rode on was communication, and specifically, printing itself; where one man could record and pass on to a wider scope his knowledge. This precipitated this kind of organization.

The job of vocational education, then, is, if you're going to train people for occupations, is to do a better job of communicating. Our problem right today is one of communication. If you want to really complicate this sort of thing, where once it was very simple where you only had books, then you introduced a telephone; and when you introduced the telephone, you widened the scope. Then if you think in terms of television and its effect upon merchandising, training, and all these things, if you want to think a little further on the storage of data and the automation of the storage and communication of data to individuals. You see, we have machines that are so complicated today that man is obsolete. Some of the machines are so complicated that it takes a machine to operate it, and a machine to diagnose its trouble, and a machine to run the thing. One man does not have the ability or would not live long enough to understand some of the machines. Then, how do we stimulate a man that only takes one little part of a machine and works on it all of his life to work on it with the integrity that it must be worked upon in order to insure safety. Have any of you flown in a plane recently? Some of you will in a few days, I suspect. One guy can leave out a cotter pin in it, and this is what I mean by integrity from workers, one man can leave out a cotter pin that holds all the lives of a group of people. We dare not today to make mistakes in our machines. This is why we need a high level group of mechanics and a high level group of individuals trained to a high degree of specialization and integrity in vocational education. And this is one of the problems. At the recent American Vocational Association there was more of what is called "vestibuling" going on. This is where guys see your OSU teacher educator or Director of Community College, or Director of some school, and they buttonhole you outside. And these were people from the aircraft, automotive and you name its foundations. Then they would buttonhole you, and they would say, "Oh, how about dinner, how about us stepping in here a little while," and you get the works, you know. And they'll take you to dinner the next day. Absolutely a vestibule selling program going on in the halls at Denver and Miami Beach to attempt to get vocational education people interested in training teachers and training workers for the aircraft industry. The demand is overwhelming!

Education is a guidance process itself, so an individual only relates, internalizes and pursues an activity that is meaningful to him at the moment. We must put youth or adults in some kind of program that has real meaning to them and observe them go through the process. If we can involve individuals in some kind of an activity in vocational education beginning at least in the seventh grade and maybe down at the sixth grade, and maybe down at the fourth grade, a youngster can discover himself. I believe some men are electronics men, interested in this and built so they can work in this area. They're not automotive; they're not woodworkers or metalworkers. They're not interested in designing or fabrication. They're electronics men. If you put these individuals in some kind of an experience, they can find themselves, see where they fit. We need participation. Industrial arts is a good program for youth to test their interest. I'd send all youth through various kinds of programs in industrial arts, if we could have the kinds of industrial arts program that would do this, put the individual through a testing program of his own ability and give him experience so that he has some basis for making a decision.

We need a new structure. Industrial arts has had this complex, and you've had a counter part of it in general business and general ag and general home economics. There are counterparts of these programs and there should be more of an interrelationship. Some boys ought to go over and take business as an exploratory course and some girls ought to go over and take industrial arts. I am primarily oriented to industrial arts. This is my field.

We ought to be struggling to improve. The goals of industrial arts which were stated by Richards in 1906 are not highly divergent with the words of the day. The problem with industrial arts is that it has just never accomplished what it said it was doing. We quote some high sounding objectives and philosophy and then put on our coats and go home and say the job is done. We have never implemented programs in either industrial arts or vocational arts. We have never spelled specifically objectives and moved towards incomes and outcomes that would accomplish what we want to accomplish.

Now, the internship program is supposed to do two things. Get at this problem of communication, so vocational education people get out of their own special areas of T and I and ag and others; and get an experience across the board, so they understand each other. We develop leadership in vocational education so we won't have to stand around and wait for sociology and economics and other disciplines to do our work for us. We'll get people and train them in aspects of leadership so they can take leadership in vocational education.

USING A SYSTEMS APPROACH

Patrick J. Mailey*

I have been looking the roster over, and the more I read, the more impressed I become seeing the positions you hold, the work that you have done and the degrees that you hold. I come to you here, not so much as an educator, as a vocational man. I come to you as a data processing man, as a vocational teacher. As a department head, I am also a plain vocational teacher. I teach data processing. I teach adult education and occupational training.

I am representing myself today; not the State of Washington, although I am semi-officially representing the Research Coordinating Unit of the State of Washington. Dr. Miner, Research Coordinating Unit Director arranged with Dr. Ryan for me to be here today.

We are going to talk primarily about the systems approach; how we go about designing a system. In data processing, it is not the magical push button world that it is reported to be by the cartoonists, and newspaper men, and even the general public. It is also not entirely true that you need to be a real way-out mathematician to be a data processing man. I certainly do not fill that mathematical model. My background is business systems and the approach is the business approach to systems. Initially running over some of the ideas before I came up here, I was talking to Dr. Ryan and she kept throwing this word objectives out--objectives. We want to come back to objectives. We have a saying in our business whether you are going to wire a control panel to activate one of the accounting machines or whether you are going to sit down and write the simplest computer program, which is a set of instructions to cause a computer to perform a given task, "Don't start until you know what you are shooting for." What are your objectives? Have you defined your problems? There is no use getting into the thing half way and then having your program, and your results not being quite what you want and then becoming enmeshed into a series of complications and changes, and you make mistakes making the changes. So, we flow chart things. When you really get down to any kind of a system, whether it is a curriculum or an insurance statistic or an inventory of a wholesale grocery warehouse, it is the detail that counts. You have to get down to grass roots. You talk to people to determine what they want. What do you want?

There is no point in rushing into trying to solve a problem before you are ready to solve it. Have you answered that question yet? Do you know what you want to do? Are you trying to just rush into this and be the first one with the solution. In a class of 20 adult students, post high school, varying ages and sex and so forth, it is very common to have the individual who appears to be most behind coming in first, second, or third with his completed program. We give a program assignment and say, "Here is the assignment. You are going to write this program." Some just cannot resist taking a glimpse of how this is going to be, and then starting to program it. They just start writing down their instructions to the computer before they have really figured out what they want to do. Others sit there, and you could almost accuse them of being lazy. Tomorrow is the deadline. And the next thing you know, they are testing their program and rarely the first, but maybe the second, third, or fourth test of their program works. Now, these are not big way-out comprehensive programs, so we frequently get results on the third or fourth test. We get the inventory control, we get the tape update problem solved, we get the kind of results that we wanted because the student took the time to analyze what it was we wanted and what the problem was he was going to solve. The other student by this time is probably bogged down. We have had to wash students out because they could not resist this urge to rush into it.

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There is another fundamental that I like to present. In trying to solve a problem and trying to define a problem, if you become bogged down, do not give up. You just do not give up. You keep looking and probing and the answer will come, a path will open up. We have a sign hanging up above the computer that gives the definition of a programmer, "A person with an astonishing ability to absorb repeated failure." This, of course, is the characteristic of the researcher, too, isn't it? In order to accomplish his task, sometimes he will have to try many routes; have an astonishing ability to absorb repeated failure.

I am going to emphasize follow-up here, since I know you are moving into the area of curriculum evaluation. This is really what follow-up is in vocational education. All this money being spent, what good is it doing? This is what follow-up boils down to. Is the individual being employed in the occupation for which he was trained? That is the question. That was the question that we were asked to answer by the Department of Education Research Office last June. We began with the idea that all that was necessary was to come up with a follow-up system. Could we come up with a system which could evaluate the student, one which would encourage the student to respond to the questionnaire? Could we come up with a set of questions that would satisfy the requirements of the state officials, the federal officials, the local officials, and the student? I will describe generally how we went about it. I talked to a few state vocational supervisors, head of the T & I section, the home economics department, vocational agriculture, and the various business occupations. We found that each of these department heads had different requirements and different approaches. They wanted different answers. Out of these discussions and thinking, we began to get an idea. The person we really have to go to on this, and this is where we get back to the grass roots, is the instructor. I have a hunch, I said to myself, that these instructors are already keeping a follow-up. The distributive education group said, "Well, we kind of do a follow-up up here." I thought of my own students. I know where my students are. I know where they are working, I keep track of them. It is a matter of personal pride. I am evaluating myself, whether I like it or not, or I am no good as a vocational instructor. I went on this premise that most vocational instructors wanted to be vocational instructors, not just to be working in the field, and that they were interested in their students and in knowing how they did. I traveled around the state to junior colleges, various vocational technical schools, and talked to vocational directors. It was summer time and we couldn't meet them all, but we were able to meet a representative group of instructors. By the time I got to Spokane, I thought we could come up with a system. The assistant vocational director of Spokane Community College, said, "If you have some crazy idea that you can keep track of kids after they leave this place, you are way off base. We would not be able to deliver more than 25 to 30 per cent." Still we went around, and I said I would like to talk to instructors. We went down to the bakery department. I asked, "Do you keep any sort of record yourself on where your students go and so forth?" "Yes, I got it right here." He opened a file drawer, and said, "Pete is over at such and such a bakery and Harry was at XYZ Bakery, but now is over at such and such restaurant and Larry is over at Davenport Hotel. This fellow is in Montana."

Then we went up to the drafting and we asked that instructor, "Do you have any record of where your students are and so forth?" "Yes, I do." The files were beautiful. Names, addresses, where to contact them, and the whole thing. He hadn't been asked to keep this record, you see, he was just interested in them. This is about as grass roots as you can get, down to the instructor student relationship.

This is what we based the follow-up approach on. It is being implemented now. It has gone smoothly. There are 20 or 25 post high school institutions in the State of Washington that are involved in the follow-up study. The state is covering initial cost of this for the first year. By 1968, when, according to the Vocational Education Act of 1963, people are supposed to have some answers as to where the federal money has been going, we expect to be able to give some answers from our follow-up data. How does the follow-up relate to the systems approach? Essentially that is what we did, use a systems approach to design a follow-up. What did we want to know? We wanted to know if the student really did succeed in the occupation for which he was trained. We used a logical flow chart to set forth the activities involved in finding the answer. Essentially this involved getting teachers to participate in the follow-up. The students fill out a sample questionnaire while they are still in school, and by doing this periodically while in school, before they leave they understand the questionnaire and their part in it. We used the PERT system to evaluate the proposal, that is, the Program Evaluation Review Technique. This was originally used and developed by the Navy to develop logical approaches to a general system. The PERT system is really a logical flow chart. Making a flow chart means deciding first what the problem is. The next logical thing would be to get information from various levels. Then there should be a decision box, a time to think and mull over all the facts. At this point the logical flow chart is developed, describing the logical sequence of steps that must be taken to reach the desired goals. Systems analysis involves identification of what has to be done, then systematic analysis of the means by which that should be accomplished, and charting this out in great detail. When you set the objectives you set the levels of performance you want to attain. Having charted the ways, you bring about the attainment of that performance. At a later time you provide for determining if that level of performance has been obtained. The process, then, is to first define the task; second, set up means of achieving these goals; then evaluate to see if the performance you set out to achieve has been achieved.

EVALUATION OF VOCATIONAL EDUCATION PROGRAMS

John D. Krumboltz*

I am impressed by the distinguished nature of this group. I have decided to change, somewhat, my plans for meeting with you this afternoon. In order to achieve the most profitable use of the time with a group as well qualified as you. Undoubtedly, your professional concerns with evaluation cause you to know much about the topic. Perhaps the way we could spend some of our time would be to look at some problems of common concern. I will share with you my observations, ideas and point of view. You can either accept or reject or argue or ask questions.

The general topic is "evaluation in the area of vocational education." I realize that you are vocational educators, and I am sure you have had experience with evaluation in one way or another. It seems to me that there are two major problems in evaluation. One kind of problem is deciding whether any given individual in a program has achieved objectives that we wished him to achieve; and the other problem is deciding whether or not our course in its totality is successful in achieving the objectives we have in mind. In fact, we are concerned whether or not the objectives themselves are satisfactory objectives. In some ways, these problems are interrelated because actually the success of an entire program depends upon whether each individual in the program has achieved program objectives. The other problem, evaluating the program in its entirety in terms of whether the objectives are suitable is a much more complicated problem.

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*John D. Krumboltz, Professor of Education and Psychology, Stanford University.

Let us look at some examples of evaluation instruments, in vocational education, which illustrate some things about how not to evaluate. Perhaps we could criticize these, pick out flaws in them, and in that way generate some principles for evaluation in vocational education.

The first principle is the point that any evaluation procedure must be based on the objectives of the course. I understand from looking over some of your projects and looking over the course syllabus that you have already discussed operationalizing objectives in behavioral terms and you are very familiar with this approach. An evaluation instrument is an operational definition of the objectives of the course. This is one of the things that is often overlooked. Whatever we ask for in examinations is what the students will learn; therefore, the nature of your examination is a most important determinant of what the students will learn. If you write an examination or if you have an examination that measures superficialities, then the students will study for superficialities. If you ask test questions such as, "On what page will you find a definition of an electron?" then that is what the students will learn. They will learn the page numbers. If you say, "Who wrote an article about such and such," then they will take pains to memorize the name of the authors. If you want people to master skills then you have to have an examination where skills can be demonstrated, and only people who have mastered the skills can pass the examination. It is very important that this exam flow naturally from the objectives of the course and that it actually constitute objectives of the course.

Sometimes it is not always possible to provide a real test of the skills, sometimes it is necessary to resort to paper and pencil representations. There are some kinds of skills that are easily measured on paper and pencil; although, a performance test is ultimately the best test. Let us look at a few examples of paper and pencil tests that represent approximations, perhaps of a final performance. This is an electronic examination. It is only ten items long. The reason for this is to see how it is possible on a poorly written test, for people who know virtually nothing about the subject to get a very high score. (Participants take test)

Everyone is done? Let me read you the answers that I am told are correct by experts in the field. Let us make a distribution of the scores. When I first asked if anyone knew anything about electronics, a few raised their hands. We will call this group the self-appointed experts. We will call the other group the neophytes.

Is the mean score of the experts any higher than the mean score of the neophytes? Suppose that you truly had known nothing about electronics, what would your score be? It should be twenty-five percent; about two or three on the average should guess right by chance. Actually, you see, even if you said you knew nothing about it, you got at least a score on the average of six; no one got a score as low as three which is the upper limit of what you would by chance; therefore, there is something wrong with the test, or all of you are much more modest than you deserve to be; or you are all liars. If a test is good, the people who know nothing about it should get a chance score and the people who know something about it should get a good score. It is quite possible in a poorly written test for people who do not know anything about it to get high scores, and people who know a lot about it to get low scores. A good test item is one which people who know the answer will get correct, and people who do not know will miss. If everyone in the group knows the answer, everyone should get it right. The theory behind this is achievement measurement as opposed to traditional test theory which item analysis represents. Your purpose in vocational education ought to be to make sure that every item measures an objective, and ideally if you have done a good job of teaching, everyone should get everything right.

There is no guaranteed, sure-fire method of determining that your test measures your objectives. What you can do is make a grid on which you enter objectives on one axis and test items on the other, being sure to build items that sample the different objectives, measuring at different skill levels. There is no sure way to determine if an item measures effectively an objective. The best approach is not statistical, not magical, not computerized, but, rather, with a human being. If you want to know if an item is effective in measuring attainment level of a skill, rely on human judgment. Be sure, however, that the human judgment is based on specific operational definitions of your objectives and very clear procedures of measuring the objectives.

In vocational education particularly it is important to note that a paper and pencil test is only an approximation, and it is a poor approximation. If it is possible for you to evaluate the performance of a student by observing him on the job and seeing how well he performs, this is the ideal test. If your objective was a skill performance, then observing the performance should be the test. I have no belief in paper and pencil tests except as approximations when it is not possible to assess in any better way. I do not advocate them over direct observational performance.

In evaluating a vocational program, you have to go through the entire procedure, asking yourself,"What are the purposes of this particular vocational training program?" You must determine for which occupation, and what it is that a person will be expected to do, at what level of performance, on this job. You have to follow-up the graduates of the program when they are on the job, talk to supervisors and foremen, asking, "What is the person able to do?" "What is he not able to do? What is he supposed to do that he does not know how to do?" In this way you can find gaps in your training procedures; that is, you can evaluate the effectiveness of your vocational training program.

An important question that you should ask in thinking of evaluation of vocational education programs is, "How can we find out what specific things we can do to improve our vocational education program?" This implies evaluation with a built-in improvement feature as part of it. What we really ought to be saying is, "Yes, we have a good vocational education program, but how can we improve it?" If we take that point of view, then we follow up the graduates and find out the skills in which they are lacking relating to their performance on the job. Then we try to improve the training, so that the next year graduates would be better trained than the ones the previous year. This means that evaluation will make it possible for you to say, "We are doing a better job this year than we did last year," rather than "Yes, we sent out a survey and eighty-five percent of those answering said, 'You are doing a good job.'"

One serious consideration is to be sure that the objectives represent what industry in the area requires. Go to the man in industry and ask exactly what kind of performance is expected for given jobs at different levels; for example, entry level. You are asking industry to construct the instrument for you, by identifying the skills that you will want to teach, those that you will want to observe as a basis for evaluation. Once you have identified the desired skills, then your task is to teach so every student in the course gets one hundred percent on the criterion test.

In vocational education it would seem that there should be two kinds of tests, the trades test, which is designed to find out quickly and simply whether an applicant knows his trade and the follow-up test, to see whether a program graduate is performing satisfactorily on the job. The trades test is a sort of screening out test. To evaluate a program paper and pencil tests can be used as approximations while the student is in the classroom, if it is not possible to observe performance. However, in all cases possible the performance type test is to be preferred, and these tests should be given before he goes on the job. The performance test will determine in industry's mind how effective the program is.

Finally, let me comment on the use of computers in vocational education evaluation. The computer, by itself, will not solve the evaluation problem. The computer is just a very rapid way of doing something that you could do by hand, if you had enough time. So, a computer does not really solve the problem of evaluation, except to speed up the process. First of all, however, the evaluation process must be defined, and this must start with definition of objectives.

HOME ECONOMICS CURRICULUM*

May DuBois**

OREGON PROGRAM OF VOCATIONAL EDUCATION LEADERSHIP DEVELOPMENT

Leadership Interns

Darrell L. Ward***

Expansion of vocational education since implementation of the Vocational Act of 1963 has made imperative a concerted effort by local and state agencies to adequately fill emerging leadership needs. The Oregon Program of Vocational Education Leadership Development has been initiated in response to this need as expressed by local high school, community college, university and State Department of Education administrators. The program has endeavored to provide additional and improved leadership in the field of vocational education through inservice seminars and workshops for present leaders and an intern program to prepare potential leaders of vocational education. Dr. Dale Parnell, President of Lane Community College, has stated, in referring to the Vocational Education Leadership Intern Program, that: "The intern idea is the kind of program that will give some very important experiences to promising occupational education administrators, as well as up-grade all of occupational education in our various institutions."

Objective of the Intern Program

It is the objective of the leadership intern phase of the program to identify, recruit and select potential leaders of vocational education, and through a program of combined academic course work and practical field experience under the supervision of recognized leaders in the field prepare them for leadership roles. The need for a program of this nature has been dramatized by the expanding role of the vocational education administrator. Greatly increased are the duties and responsibilities of leaders in vocational education. Equally as critical are the emerging positions of leadership which are unfilled due to lack of available personnel. Program development and improvement can progress only as fast as adequate and capable staff time can be made available.

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*A transcription of this address was not available, so the text is not included in this report.

**May DuBois, Head, Department of Home Economics Education, Oregon State University.

***Darrell L. Ward, Coordinator, Vocational Teacher Education, State Division of Continuing Education, Salem, Oregon.

The program is jointly sponsored by the Division of Community Colleges and Vocational Education, State Department of Education, and the School of Education, Oregon State University. Coordination is provided by the Division of Continuing Education, with local public schools and community colleges cooperating in program planning and the provision of the intern centers. Mr. Wallace McCrae, President of Blue Mountain Community College, which serves as a local intern center, has stated that: "I feel that all who have been responsible for putting together a cooperative approach to the vocational internship program are to be commended. The need is great and many of us believe this is the way it should be done." Mr. Owen Sabin, Superintendent of Milwaukie Union High School District #5, where an intern is currently employed, has expressed the sincere interest and great need for local schools to assist in the development of future vocational education leaders. According to Mr. Sabin: "It is imperative that local schools accept major responsibility for development of educational leadership."

Program Development

Dr. Robert O. Hatton, Assistant Superintendent, and Dr. Wm. G. Loomis, State Director, Vocational Education, Division of Community Colleges and Vocational Education, State Department of Education, initiated leadership seminars on vocational education in February and March of 1967. These seminars brought together recognized vocational education leaders for concentrated study of four issues: the development of a rationale for occupational education in Oregon; the development of articulated vocational education curriculums, junior high through community colleges; the development of vocational education leadership personnel. Recommendations in the area of leadership education included the provision of additional workshops, seminars and conferences for present leaders in the field, and the implementation of a statewide program to recruit potential leaders for an educational program consisting both of academic course work provided through the State System of Higher Education and field experience in leadership provided through local and state educational agencies. The internship program has been developed from the basic guidelines established by this group of approximately 50 community college administrators, local high school administrators, teacher educators and State Department of Education personnel.

Preliminary plans developed by the seminar group were later reviewed by more than 100 vocational education supervisors, directors and other school administrators who attended a statewide workshop on vocational education. Further refinement of the internship program was accomplished during six area meetings and in individual sessions with Oregon State University, State Department of Education and local educational agency personnel.

An advisory committee has functioned to provide guidance for this program's development consisting of Robert E. Zertanna (Dean, Mathematics, Physical Science and Engineering Technology, Portland Community College) representing Oregon Community Colleges; Dr. George M. Henderson (Assistant Superintendent, Lebanon Union High School Districts #1 & #16) representing Oregon Public High Schools; Dr. Theo. Yerian (Head, Business Education and Secretarial Science Department, Oregon State University); Dr. Wm. G. Loomis (State Director, Vocational Education, Division of Community Colleges and Vocational Education, State Department of Education) and Darrell L. Ward (Coordinator, Vocational Teacher Education, Division of Continuing Education).

Program Implementation

Implementation of the Vocational Education Leadership Intern Program has been directed by a committee consisting of Dr. Pat H. Atteberry and Dr. Larry Heath, Industrial Education; Dr. Theo. Yerian and Dr. John M. Chrismer, Business Education and Secretarial Sciences; Dr. May DuBois, Home Economics; Dr. Henry A. Ten Pas, Agriculture Education, representing the vocational education departments at Oregon State University; Dr. Wm. G. Loomis representing State Department of Education; and Mr. Darrell L. Ward representing the Division of Continuing Education. This committee has been responsible for design of the overall program and for the provision of academic course work. They have worked with local school administrators in the selection and identification of potential recruits for the program, and in the development of intern centers to provide field experience. This committee meets on a regular basis as required to provide coordinated direction to the program.

The committee was successful in recruiting and preparing four interns for entry into the program at the beginning of the OSU summer session, 1967. Each intern participated as a full-time student in individually planned course work. During the summer session programs were planned by the interns and their assigned major professors, with final approval made by the intern committee. Also during the summer local school officials, including both high school and community college administrators, interviewed prospective interns for possible employment in their agencies. Representatives of Blue Mountain Community College, Lane Community College, Oregon State University, Milwaukie Public Schools, St. Helens Public Schools, Portland Public Schools, and Portland Community College, interviewed the interns relative to placement in their institutions. The available interns (four) were placed as follows: Mr. Paul E. Smith, Electronics Instructor from Skagit Valley Community College, in the Milwaukie Public Schools; Mr. William S. Fraser, County Extension Agent (former vocational agriculture instructor) from Jefferson County, at Blue Mountain Community College; Mr. Richard H. Eno, Distributive Education Coordinator, Eugene Public Schools, at Lane Community College; Mr. Casmer F. Heilman, Vocational Program Supervisor, Hood River Public Schools, at Oregon State University.

Each intern has developed, with the cooperation of his local supervisor (Mr. Owen O. Sabin, Superintendent, Milwaukie Union High District #5; Mr. Robert E. Hawk, Dean of Applied Sciences, Blue Mountain Community College; Dr. Ray LaGrandeur, Associate Dean of Instruction, Lane Community College; Dr. Henry A. Ten Pas, Head, Agriculture Education, Oregon State University) and his major professor at Oregon State, an individual program of activities which provides experiences in all service areas and in the varied administrative responsibilities of vocational education. Mr. McCrae has stated that: "the internship program seems to me to provide a motivation for each participating institution and its faculty by a rather intimate association with the intern supervisors who visit the campus."

The program of activities in which the intern participates while at the interning center is closely coordinated with an individualized schedule of academic course work designed to strengthen his administrative abilities. This course work can be applied toward completion of degree programs and seeks to assure basic administrative preparation. Additionally, planned seminar, reading and conference, and project experiences are provided to further familiarize the intern with the service fields of vocational education.

Much of the formal course work is made available to interns at the centers where they are employed. Visiting instructors from Oregon State University, assisted by local personnel, as well as staff from the State Department of Education, Division of Community Colleges and Vocational Education, and staff from the Division of Continuing Education provide course materials to interns. Additionally, concurrent registration in the State System of Higher Education has been extended to the intern program, allowing participants to register for credit at any State System of Higher Education institution without paying fees in addition to that of a regular full-time student at a single institution.

Evaluation

Evaluation of the 1967-68 program operation is currently being conducted. A key to this program's planning, development and evaluation has been the involvement of many different agencies bringing to the program a wide variety of educational background and experience. The evaluation is aimed, of course, to the further development and improvement of the program on a continuing basis for the state of Oregon. Current questions being investigated include: What intern experiences are essential for all administrative personnel in vocational education to have? What background and depth of experience should candidates for internship bring with them into the program? What types and structure of interning centers should be utilized for providing the educational experiences? What academic course work is required to broadly prepare leadership interns in all administrative areas?

Plans are now underway for the initiation of an enlarged intern program with summer session 1968. More than 40 candidates have currently applied for entry into the 1968-69 program, of which 10 will be selected for participation. Those selected will be enrolled in the full-time session at Oregon State University during the summer term of 1968, and then will become half-time interns, half-time students for the fall, winter and spring terms. An improved and continuing program for preparing vocational education leaders in the stateof Oregon is expected from the cooperative effort that has been made by local school districts, community colleges, Oregon State University, the State Department of Education, and the Division of Continuing Education this year. For further information regarding this program, you may contact Darrell Ward, Coordinator, Vocational Teacher Education, Division of Continuing Education, 126 General Services Building, Salem, Oregon, 97310; Dr. Wm. G. Loomis, State Director, Vocational Education, State Department of Education, 305 Public Service Building, Salem, Oregon, 97310; or Dr. Henry A. Ten Pas, Head, Agricultural Education, 305 Extension Hall, Oregon State University, Corvallis, Oregon, 97331.

1968-69 Program Expansion

More than 40 candidates for 1968-69 internships were reviewed, from which eight have been tentatively selected for interning. These eight candidates are currently being interviewed by centers for placement during the coming school year. Centers will be available at high schools, community colleges, at the State Department of Education and at Oregon State University.

A 1968-69 intern will begin his program as a full-time summer session student at Oregon State University. During the school year following, the intern is a half-time employee of the interning agency, taking part in an individually planned program of vocational education leadership experiences, while continuing a half-time academic program with Oregon State University.

Placement of the 1967-68 interns has not been completed. Of the four interns who participated in the program this past year, one has been placed in a combination teaching-administrative position at Oregon State University, and another will be developing and instructing in a new phase of the business education curriculum at Lane Community College. Each of the interns has had a variety of both in-state and out-of-state job opportunities to consider, ranging from college teaching and state supervisory work to high school and community college vocational education directors and diversified occupational program coordinators in local educational agencies.

CHALLENGES OF VOCATIONAL EDUCATION

Jack E. Brookins[*]

Last January Dr. Ryan was in the audience when I talked on a panel with a group of people, including Vice Chancellor of the State System of Higher Education and a member of the State Board of Education with Dr. Robert Hatton, Assistant Superintendent in charge of Oregon Community Colleges and Vocational Education as chairman of the panel. The topic of the panel was Vocational Education Beyond the High School. Dr. Ryan thought that my comments there might be appropriate today. She said she wanted an inspirational message. I am not so sure what kind of inspiration this might engender on the part of this group at the end of a workshop like this. I am probably going to say some controversial things, some things with which you will not agree.

I have a feeling that with the challenges and issues facing us today, the opportunities and challenges we have today as a result of Vocational Education Act of 1963, that our own business, vocational education, is probably a little more than half full of incompetent nincompoops. I see teachers and administrators driving down the freeway in a 1928 Chevrolet touring car with their eyes on the rear view mirror. You can see signs all over the West Coast. I will not mention the rest of the country. Auto mechanic programs are still being offered at the high school and post high school level with instructors who are Ford specialists, Chrysler specialists or General Motors specialists. You can still find a lot of day trade programs being operated in trade and industrial education with the standard six hour shop program, particularly at the post high school level. They lie a little to themselves and say that they are going to teach related math, science and English in that classroom but the job never gets done. It is the exception rather than the rule. You have been talking about curriculum; so, today, first of all, I will talk about some assumptions I have made about vocational education; secondly some of the problems that I see in vocational education; and third, some recommendations in terms of trying to implement curriculum. It seems to me that vocational education today is faced with three over-riding challenges, and they are very simple. The first challenge is to make it available or accessible; and the second challenge is to make it respectable, to establish its worth or positive identity; and, finally, the challenge is to make itself meaningful. These are the three challenges that we are going to talk about. In any phase of the program, agriculture, trade and industrial education these three challenges, availability, respectability and meaningfulness are the big ones.

My own personal biases should come out right here in the beginning. Let me just enumerate them for you quickly and we can argue about them later. First, a fundamental assumption on my part for all education is that students are the most important natural resource of our nation. Also, that the needs and expectations of our students are more important than those of business and industry. In vocational education at the time when I was a kid and my father was attending Colorado A and M we were working to put up this ideal of fitting our programs to the needs of business and industry. This is one of the things that was in that 1928 touring car. If you really work with business and industry you find out that they do not know what they need and if they do know they will not tell you. Most of them do not know!

Another assumption of mine is that most of our vocational programs operate with the view of the past rather than the future. I also feel that most high school and college dropouts are pushouts. The manpower problem of this nation and this world can only be solved by raising the level of the entire labor force. We cannot do it on a piecemeal basis; we have to develop educational programs which will raise the standards and raise the level of performance of the entire labor force. We cannot work in isolated pockets of problems and work on those and expect to solve any, because you just create more in the process of doing these.

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[*] Jack Brookins, President, Southwestern Oregon Community College, Coos Bay, Oregon.

I believe that vocational education must become more humanistic than it has been in the past. This is related to my other comment about students being more important. We are too nut-and-bolt oriented. We are too mechanistic. We think about machines and business and industry, and we think very little about people. Conventional wisdom in American education and in American vocational education does little more than prolong adolescense, and in vocational education if we are ever going to do the job we will need to concern ourselves with broader goals and objectives of education and make ourselves a part of it. These are some of the basic assumptions on which we can start.

As one who is a part time, not-very-competent industrial sociologist, there are some facts related to industry and economic development that I would like to remind you of. You all know them but we tend to forget them as we plan programs, as we plan curricula and as we try to operate programs. We are living in a highly industrialized society and the whole world is becoming more industrialized. As you study the process of industrialization you know certain things will happen and this is what I want to talk about.

This process of industrialization inevitably brings a number of changes in any society. I have had the opportunity to do some work on establishing programs in South America, Chile and Africa. As you look at any society in the process of industrialization, you can see certain things that are inevitably going to happen. One is that there is going to be an increase in the development in importance of the secondary levels contrasted to primary levels. Service, distribution and marketing are going to grow. Back in the late 40's and 50's, trade and industrial and ag men were fighting vocational education people; not wanting distributive education as part of vocational education. There were real serious fights on whether we should take business education into the fold or not. This is absolutely ridiculous; they were looking into the rear view mirror. These programs and services, distribution and marketing, are the future of vocational education. It is not trade and industrial; and it is not agriculture. Agriculture people finally came up with agriculture-business and they are grabbing that straw trying to keep alive now. They did not have to do that, if we just read literature that is available to us. If we look at the forest rather than the trees we can tell what is happening in a general way in our labor force in the year 2000 in this country. We know what it is going to look like; we need to plan programs for the year 2000 and not 1967.

This is as simple as I can state the challenge. As the country goes through the process of industrialization, there is going to be increased interest in development of science and technology. As the process of industrialization continues we are going to have increasing diversification and specialization in the labor force. We know these things, but we do not put them into practice. You can look at your home institutions and find these things true. We are going to have a changing occupational structure and it will never remain the same. It will never remain the same unless someone drops the big bomb and we have to start all over again. There is going to be a change in quantity and quality of the labor force. There is going to be a change in professional, technical, clerical and service occupations. There is going to be a corresponding increase in unskilled occupations. There is going to be more emphasis on knowledge and understanding in many skills as contrasted with manual and manipulative skills. We still find programs as if in T and I there were no manipulative skills left. If you stop to think about it, all of those skills an auto mechanic or an electrician or a machinist has to have today are mental skills, very few manipulative skills. A housewife today has to have more manual skills than a machinist if she is going to take care of all of the appliances around the house. Face it and you can argue about it if you want. We are also going to be faced with the fact that there is going to be a rising level of education in the population and in the labor force.

Seymour Wolfbein talks about the crucial climb in the mid-60's when there became more white collar workers. At that time the level of the education of the labor force went beyond the occupational requirements. Most people today obtain a level of education beyond occupational requirements. This is a significant fact, as you begin to plan programs. What does this mean to general education? What does it mean for curriculum development at the high school level? These are some facts.

Let me try to put into focus some problems and issues. I have a philosophy that I have taken from Robert Frost, in a poem called Road Not Taken. You may remember the last couple of lines in it, "Two roads diverged in the wood and I took the one less traveled, and that has made all the difference." If you want to be a success in this business, if you really want to make the contribution, take the less traveled road. Rough is the grade with the ends kicked out. If you wanted to get in the rough and stay there, you wouldn't be here wasting your summer in Corvallis. I can think of more exciting places to be.

Some of you have heard this illustration of technological progress. It comes from Bernard Crass, who wrote in 1939, "Technological progress is as old as man. In the history of all societies is the history of invention, but if inventions and changes in history are not new, what is new is the increasing rate in which they are occurring." He goes on to remark on Jay Lewis Powell's description of this acceleration in some very interesting terms. He asked you to compress the history of mankind, 50,000 years, into a period of fifty years. For the first four years nothing happened and then for the next ten years man left his cave for some other kind of dwelling, but nothing significant then happened for forty years, and then five years ago someone invented writing and two years ago Christianity appeared and fifteen months ago Gutenberg invented the printing press and ten days ago electricity was discovered and yesterday the plane was invented and last night radio and this morning television and the jet plane less than a minute ago and somewhere around fifteen seconds ago we took our first leap into space in sputnik." If you do not think that this provides curricular challenges in vocational education you are smoking something different than what I smoke.

Another way, Margaret Meade, a sometimes popularized anthropologist, told us that in 1959 almost ten years ago. I am just using these old things to tell you that all the facts were there and we have not done a thing about them. In 1959 Margaret Meade wrote an article in the NEA Journal called the Redefinition of Education. She said, "when we look realistically at today's world and become aware of actual problems our conception of education changes radically." Although the educational system remains basically unchanged, we are no longer dealing primarily with the vertical transmission of the tried and true by the old mature and experienced teacher, to the young immature and inexperienced pupil in the classroom. This was the system of education developed in a stable slowly changing culture. By itself vertical transmission of knowledge no longer adequately serves the purpose of education in the world of rapid change. What is needed and what we are already moving towards is the inclusion of a whole dimension of learning, the lateral transmission to every member of society of what has been discovered, invented, created, manufactured or marketed. This need for lateral transmission exists no less in the class or laboratory than it does on the assembly line with its working force of experience and raw workmen. The man who teaches another individual the new mathematics or the use of a newly invented tool is not sharing knowledge that he acquired years ago. He learned what was new yesterday and his pupil must learn it today. How many journeymen in the construction trade are learning from apprentices who are attending related instruction classes? Most of them, if they are smart.

We have a program going, started a couple of weeks ago. It happens to be the first and is the biggest in the nation so far under MDTA, where we have 160 journeymen carpenters in classes on Friday evenings and Saturdays. Why? Very simple, we started building some complicated buildings over on the coast. The journeymen over there could not do the job so general contractors came in and began subletting the carpenters work to specialized contractors out of the Portland area. They bring their own men. They finally woke up to the fact that they are losing their bread and butter and had better catch up or they are going to go down the tube. This is happening all over the nation.

Let me tell you about the research project that I am working on right now because it does have relevance. I use most of my illustrations from trade and industry but they apply most any place. I am doing some consulting with the International Woodworkers of America. It is a relatively young union in terms of union histories, thirty-six years old. One of the few international unions that has its headquarters on the West Coast. The IWA is in trouble. They do a better job generally than my own union, the carpenters union, in representing their people. Jurisdiction in the lumber and wood products industry is pretty well distributed between the IWA and the Lumber and Sawmill Workers division of the carpenters. On the West Coast for the last fifteen years, production per man hour in plywood and sawmills has been going up an average of three percent per year. Membership in the union has been going down three percent per year. The boys upstairs at the international level and at the regional office recognize it and that is nothing but trouble. I do not know how you feel about Harry Bridges but he is pretty sharp. Harry saw this coming, and years ago with help from a brillant educator on his staff as research director, he negotiated the mechanization agreement for the longshoremen and warehousemen. They have just renegotiated this agreement so that they would share in the profits of increased productivity. The IWA is over the hill; they have let management go along to the point where they almost have no claim on increased productivity anymore and they are in trouble. I could give you the same kind of pitch as to what is going to happen to labor unions as I can on education. You look at these things that are going to happen as a result of this process of industrialization.

We are doing a study right now in the Weyerhauser plant, the new plywood plant that Weyerhauser built in North Bend. This is the most highly automated plant in the nation right now. There are several others that are going to be more highly automated being built. It only employs on three shifts about three hundred production people, but they have to have a full time business agent and a full time personnel man just to fight over jurisdiction and disputes and agreements of that plant as a result of new automation. They had crews on the blue gang, five or six guys; they are down to one now, the foreman, who is left because of seniority and all he does is watch dials and push buttons. The maintenance force of this plant has increased about three hundred percent and the unions have insisted on a seniority clause in their bargaining agreement. As a result they are getting a maintenance man who cannot take care of the new equipment. What are they doing? They are contracting anytime they get a new piece of equipment that cannot be repaired. They contract this maintenance with an electrical contractor, a sub from the outside or a mechanical contractor, so then come the inside electricians and in come the plumbers or in come the steam fitters inside of this plant that is organized by an industrial union. You think that you do not see problems and that these are not problems for education? They are serious problems if you are going to deal with the labor force, if you are going to deal with vocational education. These people do not understand what is going on and it is our job at the high school level, at the post high school level and in preparatory instruction.

It is our job at the supplemental instruction or extension level of instruction to teach people what is going on in the world around them, not just about welding or how to use a transit and a level or how to set up a special course and tune up a carburetor. This is not vocational education any more. It is not going to do the job. What I am suggesting to you, is if you are going to become a successful vocational educator and if you are going to want a good vocational education program, you are going to have to run a general vocational education program. You are going to have to be geared up so that when somebody comes in with a problem, you will put on a four hour course or you will put on a twenty hour course or you will put on a two year program. It does not matter what it is, you are going to have to get involved with labor education; you are going to have to get involved with management and supervisory training. I am serious about this.

One other illustration. Our neighbor kid, Charley, graduated from high school this June. He is eighteen years old and he faces a work life of forty to fifty years. If he retires at age sixty which is probably a pretty good assumption, he will retire at the year 2009, and he will stand a good chance of living at least another fifteen years and probably more. If he lives fifteen years to age seventy-five he will give up the ghost at year 2024. Now, Charley is never going to go to college in the usual sense. He is not going to get a degree. He is going to have to go to work. We have a high school that has absolutely no vocational education. That is criminal. Charles does not know what he wants to do. If he is lucky when he gets out of the service, the longshoremen and Harry Bridges will take care of him. If he is not lucky he will go to work in one of the mills and he will get pushed around until he reaches the age of about fifty and then he will not be able to get a job at all. There will be no work for him. When he gets out of the service I hope we can do something to help him, first of all to learn to read and write, which he never did in school. Then maybe help him to move on into a job or an occupation which will be meaningful, realistic and something that he can grow with. Twenty-five percent of all the people who have ever lived in the world are alive today, twenty-five percent! Our population of this country today, about two hundred million, is going to increase to two hundred fifty million by 1980. Within five years half of this nation's population will be twenty-six years of age and under. The number of persons over sixty-five will rise by fifty percent in the same period. The enrollment in all colleges including community colleges by 1985 is going to double. This is all the colleges and universities in the United States. Then they will have to add 200 more colleges with an average enrollment of 4,000 each. If you want to know what the future in education is; it is the community college movement. We still are not doing the kind of job that is necessary.

I said when I started that we have problems of image and commitment and we try to solve these problems by becoming snobs. We have lots of vocational and technical education snobs; we want to take the cream off the top. Let us face it. You cannot take the cream. If you want to run a program that takes kids from the upper twenty percent of high school classes or college classes, you are never going to have a successful vocational program. You are going to have to deal with the average student. You are going to have to take them from where they are and take them as far as they are able to go. We are going to have to design new programs and new techniques to do this.

I am not going to talk an awful lot about curriculum but there are two things that I brought along that I want to mention. If you have not seen them they are worth looking at in terms of what is happening in curriculum development and its structure. One is a report from UCLA, the Junior College Leadership program called, Systems Approaches to Curriculum and Instruction in the Open Door College. The other thing in terms of curriculum and instruction that I wanted to mention is a publication called Education Technology. This is a pretty practical presentation. It is a report of the special aero-space education foundation seminar which was held last year. There will be another one in Washington, D. C. this September.

The best vocational education in this country is being done by the military services; the best vocational education. They are farther ahead than public schools. There is a lot we can learn from them. We had better start doing it, because there are all sorts of people on our tails. We are in the honeymoon period now. We have money. We have the Vocational Education Act, and we have people in the Bureau of Labor and Department of Commerce trying to take over our functions and activities. In some of the cases, they are taking over and they are doing a better job than we are.

I issue this as a challenge. We in vocational education need to recognize the three fundamental explosions with which we are faced and we have not done it. With all the talking that is going on in the operating level, we have not faced the challenge. We have not done it in Oregon, and if Bill Loomis were here I would say this! All Bill Loomis's office seems to be able to do is get involved with paper work. There is very little leadership that is coming out. There is very little leadership that is coming out of State Departments of Education. I really do not know of an exception to that. There are a few exceptions, but there is very, very little leadership coming out of institutions like this one. We have organizations like Research Coordinating Units. These are Research Coordinating Units nationwide not opening doors; they are building hurdles.

They are sitting back in Washington, D. C. doing an evaluation. We get a five year chance and either we are going to do the job or someone else will do it for us. We have not produced it in Oregon and Washington has not produced it. Dick Nelson and the boys in California and Les Smith have not produced it.

Let me move to some things that I think we should be doing. I think our institution and every institution is doing something, but I am serious when I say that we cannot be snobs. If you are in the vocational education business you have to learn about remedial education. Nobody knows how to do it very well, but you have to learn about it and you have to be able to be willing to take kids and adults who cannot read and write and teach them to read and write in a meaningful realistic way and then give them the skills that will allow them to go out into industry in the work-a-day world, but keep a string on them and pull them back as they begin to grow. Some schools do this. People get excited about our institution. When I talk about the typical student at Southwestern Oregon Community College, they will not believe it. I have had to prove it time and time again. The typical student, if there is such a thing at Southwestern Oregon Community College, is 28.4 years of age; he is not 19 years old; he is not 20 years. The age range in our institution winter term last year was 15 to 74. If you are going to run a real community college or any kind of an educational center that is doing a job in any community in this nation, that is the kind of age range that you have to have. If you do not have it, in terms of a comprehensive program, then you are not doing it. We run contract programs with the welfare department for basic education and as soon as people are able to perform at a certain level interms of reading, writing, comprehension, we begin phasing them into occupational programs so that we can provide a little motivation. As soon as some of them are able to hold a job, get a job and hold it, we put them out on a job on our cooperative job experience program. Everyone of our vocational instructors and department heads or division chairmen is a work experience coordinator. When we get a student who needs to and can go out and begin to go to work then we take them out into a work experience program. We are out there in the boondocks on the coast. We cannot afford a lot of expensive equipment; we cannot afford a lot of specialized programs, but we can take a student through two terms of our industrial mechanics program to be a diesel mechanic and get him lined up on work experience and eventually on apprenticeship and make a producing worker. We can bring him back in from time to time as he begins to grow. This is the sort of thing that we are going to have to do. Some way, some how you have to convince some people in certain places that you have to have a pupil-teacher ratio of 1 to 8. We have it in certain areas where it is needed, but these people who need help have to have it, and we have to provide it in vocational education.

We have to quit being snobs; we have got to be the kind of guy that Norman Cousin talks about when he described what he thinks is the best teacher. Cousin says that "the best teacher is not necessarily the one who possesses the most knowledge, but the one who most effectively enables his students to believe in their own ability to learn. A good teacher involves his student in the teaching learning process, he motivates the student to participate in learning activities." We sit in curriculum workshops like this, and we talk a lot about teaching and the art of teaching. We should really not be concerned with teaching but with learning, I think that this is a very important distinction.

Let me go on with one other thing. We just have to set our minds to do it. There are two other books that are worth reading. One little book by Holt, that deals primarily with elementary schools is called How Children Fail. This other book I want to quote from is by Dr. Tarcher, called Leadership and the Power of Ideas. At the end of one part of this book he says, "Our new science and technology can free us to concentrate more time and energy on the problems of social organization and human growth. When fewer persons can be expected to produce an abundant quantity of goods and services, when we can speak realistically of the potential five hour day and four day week, and it is coming, it can also be expected there will be ample time and resources for experiments to humanize the organization and community, to research and plan factories, communities and cities that are beautiful as well as functional and schools that are educational. It is . . . for those community leaders who are educators and for those who are practical men of action, to join forces in a scientific laboratory of life and to apply the power of ideas to the new science and technology. Then they can become the instruments for carving a more human environment and for creating time and opportunity for learning so that the thing is secondary and end is man."

We have to remember that in vocational education, the thing is secondary and the end is man. We have gone far beyond the limits of our practical and empirical world, beyond our limits of our social alphabet. It is time to join the eminent social philosopher Dr. Zeuss and his young friend Conrad Cornelius O'Donald O'Dell and move into the unchartered but challenging territory of the unknown, go on beyond zebra, explore like Columbus, discover new letters. So, on beyond Z, its high time you were shown that you really don't know what's to be known.

APPENDIX H

Reading Materials

Required Reading

1. Macdonald, J. B., Curriculum theory and development in vocational education.

2. Morgan, R. M. and Bushnell, D. S., Designing an organic curriculum.

3. Bloom, B. S. (Ed.), Taxonomy of educational objectives: Classification of educational goals. Handbook I: Cognitive domain.

4. Krathwohl, D. R., Bloom, B. S. and Masia, B. B., Taxonomy of educational objectives: Classification of educational goals. Handbook II: Affective domain.

5. Mager, R. F., Behavioral objectives for the high school.

6. Mager, R. F. and Beach, K. M., Jr., Developing the vocational course.

7. U. S. Office of Education. Rising demand for occupational education.

8. Hamburger, M., Significance of work experience in adolescent development.

9. Kemp, Barbara H., The youth we haven't served: A challenge to vocational education.

10. Riessman, Frank, Teachers of the poor: A five point plan.

11. Schill, W. J. and Arnold, J. P., Curricula content for six technologies.

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APPENDIX I

Participant Reports of Vocational Education Programs

Participant Reports of Vocational Education Programs

Topic	Reporter	State
Overview of education in Alaska	Robert Miller	Alaska
Policies and principles for vocational technical education, Phoenix Union High School. Organization of Phoenix School System. Phoenix Area Vocational Center program, with dual registration at Vocational Center and regular high schools	John Peterson	Arizona
San Jose work experience, diversified occupation program for potential dropouts	Bill Allgood	California
Gonzales Public School System vocational program	Wade Anderson	California
San Jose School Industry Cooperative Service Station Program Regional vocational center for 3,000 students, 24 participating schools	Orville Buesing	California
Grossmont High School District program. Curriculum development through teacher involvement. Quality control over behavioral objectives. San Mateo Union High School Know and Care Center. Grossmont Union High School District Vocational Education master plan. Santana Vocational Technical Center Project SEARCH, Fremont Union High School District, Santa Clara County.	Virginia Clapp	California
System of state-owned, operated, controlled regional vocational technical high schools and technical colleges. Student selection, vocational programs, counseling and guidance, ninth grade exploratory program. Special program for disadvantaged. Basic education. Inservice training of teachers.	Angelo Tedesco	Connecticut
Adult Education Center Program	Conard Edwards	District of Columbia
Hawaii educational plan. Outline of direction, State Division of Curriculum, Instruction and Guidance.	Aaron Ahn	Hawaii
Kapiolani Community College philosophy and objectives. Governor's conference on human resources. Kapiolani Community College hotel and restaurant orientation. Kapiolani Community College educational development plan.	Henry Kalani	Hawaii
Statewide program of education	Herbert Halberg	Hawaii
Vocational program, Moscow High School	William Daniels	Idaho
Decatur vocational program. Health and Home Economics Occupations Education. Aid for Occupational Deprived Vocational Project.	William Reynolds	Illinois
Kansas State University teacher education program for vocational technical teachers. Pre-service; inservice programs.	James Albracht	Kansas

Topic	Reporter	State
Instructional Materials Laboratory, University of Kentucky. Development of instructional materials, teaching aids, visuals, teaching units. In-service training program aimed at teacher population.	Billy Vice	Kentucky
Curriculum triad. State supervision of curriculum projects involving families of occupations.	Anthony Cipriano	Massachusetts
Developing an area vocational school, Waterford Township Curriculum development through computer processing (INDICOM System)	Maynard Mathers	Michigan
Home economics curriculum, cooperative project in child development (State Department of Education and University of Nevada) Vocational Technical Center, Las Vegas. Statewide program of vocational technical education. State appropriation, $250, 000 for vocational education. Vocational program for preparing for gainful employment.	Harvey Thiel	Nevada
System of comprehensive community colleges with vocational technical and two-year college parallel program. Community college open door policy. Implications for vocational education Program Learning Laboratory.	Jack Ballard	North Carolina
Area vocational center, Tulsa. Guide to educational and vocational planning.	Joe Lemley	Oklahoma
Statewide computer science system operating on time-sharing. Statewide programs including business and occupations training for unmarried pregnant girls	William Powers	Oklahoma
Determining vocational education needs, The Dalles. Workshop in entry employment. Intermediate Education District program. Tape-slide series on job cluster occupations. Teacher in-service workshops.	James Lacy Welcome Rumbaugh	Oregon
Occupational training in secondary schools.	Robert Nichols	Texas
Sevier Area Vocational School Curriculum Development: Industry participation; workshop. Behavioral definition of objectives.	Dewain Washburn	Utah
Wenatchee Community College program. Basic Education for Migrant Workers.	Henry Bauer	Washington
Vocational program, Kent Public Schools. Industrial arts-industrial education articulation. Home economics for gainful employment. Forestry curriculum. Machine shorthand program. In-service program.	Thomas Straka	Washington
Marathon County Technical Institute program. Data processing program. Two year management program. Two year insurance program. Research and development in area vocational, technical, adult education districts. Business administration. Credit management curriculum.	Russell Paulsen	Wisconsin

Topic	Reporter	State
State program to cut across service area boundaries. Agricultur-business program. Business-T & I program. T& I-home economics program. Airline pilot training program. State guide to developing new programs. State evaluation of curricula. Vocational, technical and adult education programs, schools, course offerings, special programs.	Clifford Zenor	Wisconsin
Individual-oriented curriculum Sheridan High School	Alfred Flanigin	Wyoming

APPENDIX J

Outline of Guide to Vocational Education Curriculum Development

J-1

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1	Research Model of Curriculum Development	1
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	Specific Objectives of the Guide	4
	Assumptions Underlying Curriculum Development	4
	Assumptions about the Learning Process	4
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	A Research Model for Curriculum Development	6
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	Theory of Behavioral Objectives	9
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	Operational Plan for Implementing Behavioral Objectives in Curriculum Model	12
	Trade and Industrial Education	12
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	Home Economics for Gainful Employment	17
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	Employment Restriction Prerequisites	41
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5	Evaluation of Curriculum	52
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	Data Gathering and Instrumentation	61
	Evaluation Dimension in Research Model of Curriculum Development	62
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	Determining Curriculum Effectiveness	62
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Task Force Assignments for Guide Project

Assignment	Group Leader	Group Members
Chapter I, Research Model of Curriculum Development	Joe Lemley	Maynard Mathers Herbert Halberg Bill Allgood Anthony Cipriano
Chapter II, Definition of Curriculum Objectives	Angelo Tedesco	Dewain Washburn Harvey Thiel Welcome Rumbaugh Bill Daniels
Chapter III, Information Dimension in Curriculum Development	Conard Edwards	Billy Vice Aaron Ahn Robert Miller Henry Bauer
Chapter IV, Implementing Curriculum Decisions: Scope, Sequencing, Staff, Scheduling, Organizing	Virginia Clapp	Al Flanigin Henry Kalani John Peterson Bill Powers
Chapter IV, Implementing Curriculum Decisions: Prerequisites, Units, Lessons, Instructional techniques, materials, media	Orville Buesing	James Albracht William Reynolds Thomas Straka Russell Paulsen
Chapter V, Evaluation of Curriculum	Clifford Zenor	Robert Nichols James Lacy Jack Ballard Wade Anderson

APPENDIX K

Description of Participants by Age and Sex

Participants' Place of Employment

K-1

Description of Participants by Age and Sex

Age	frequency
49-50	3
47-48	0
45-46	1
43-44	6
41-42	1
39-40	5
37-38	1
35-36	1
33-34	7
31-32	2
29-30	2
27-28	1
	30

Sex	frequency
Male	29
Female	1
Total	30

Participants' Place of Employment

Place of Employment	Number of Participants
Secondary school	13
Area vocational school	3
Community college and Technical institutes	5
University	2
State Department of Education	7

APPENDIX L

Extent to which Participants Increased Knowledge of Curriculum Design in the Institute

Areas of New or Reorganized Knowledge About Vocational Education Curriculum Design Acquired During Institute

Extent to Which Participants Increased Knowledge of Curriculum Design in the Institute

		Frequency of Response				
Item	Description	None at all	Slightly less than average	Slightly more than average	Considerably more than usual	No Response
1.	How much new knowledge do you feel you have acquired during the institute relative to vocational education curriculum design and theory	0	3	19	7	1
2.	To what extent do you feel that knowledge you had before the institute on vocational education curriculum development has been reorganized	0	3	21	5	1

Areas of New or Reorganized Knowledge About Vocational Education Curriculum Design Acquired During Institute (Test Item 4)

Knowledge Area	Frequency of Reporting
Designing curriculum using behavioral objectives with a research model	18
Using systems approach to curriculum design	13
Developing cluster concept	12
Using taxonomies of objectives	11
Organizing aspects of curriculum planning	10
Making program evaluations, measurement and follow-up	7
Computer use in flexible scheduling	6
New approaches to sequencing	4
Staffing and designing curriculum for disadvantaged	4
Importance of communication in curriculum development	3
Using a flow chart in curriculum planning	3
Determining curriculum scope	3
Using implementation procedures in staffing	3
Providing curriculum alternatives	2
Administration aspects of curriculum planning	2
Developing a vocational course	2
Planning programs	2

Knowledge Area	Frequency of Reporting
New ideas about prerequisites	2
Emphasizing people rather than content, developing learner oriented curriculum	2
Making task analysis in curriculum development	2
Making job analysis in curriculum planning	1
Considering societal information in curriculum planning	1
Importance of the teacher in curriculum development	1
Importance of knowing about target population in curriculum planning	1
Understanding the psychological approach to curriculum planning	1
Determing need for curriculum information	1
Considering curriculum problems	1
Using job-student oriented objectives	1
Considering alternative methods in planning curriculum	1
Making an interdisciplinary approach	1
Developing broad-based curriculum	1
Making a balanced curriculum	1
Understanding research and theory of learning	1
Importance of viewing the total curriculum	1
New understandings of vocational education curriculum	1

Knowledge Area	Frequency of Reporting
Better understanding of general education	1
Developing a basic educational philosophy	1
Reorganized knowledge about democratic ideas in education	1
Importance of developing vocational education for all students	1
New ideas about grades and grading	1
Sources of curriculum materials	1

APPENDIX M

Programs About Which Participants Gained Information During the Institute

Educational Practices About Which Participants Gained Information During Institute

M-1

Programs About Which Participants Gained Information During the Institute

Program	Number of Participants Reporting	Sources of Information	Frequency*
Richmond Plan	10	Anthony Maniscalco	9
		Gordon Quick	1
Job corps curriculum	7	Field trip	7
Oregon vocational education state plan	4	Dale Pinckney	3
		William Loomis	4
Work experience program	4	Bill Allgood**	2
		Virginia Clapp**	1
		Barbara Kemp	1
Oregon intern program	4	Darrell Ward	4
Industrial education in total education program	2	Wade Anderson**	1
		Orville Buesing**	1
Diversified occupation program	2	Bill Allgood**	2
Distributive education program	1	William Daniels**	1
Elective high school plan	1	Gordon Quick	1
Portland vocational education program	1	James O'Gara	1
Portland science study	1	Victor Doherty	1
Preoccupational program	1	Participants**	1
Technology program	1	W. J. Schill	1
Trade programs	1	Angelo Tedesco**	1

*Frequencies do not always equal number of participants reporting, since some participants listed more than one source.

**Institute participant.

M-2

Educational Practices About Which Participants Gained Information During Institute

Educational Practice	Number of Participants Reporting	Sources of Information	Frequency*
Using research model, systems approach to curriculum design	25	T. A. Ryan	24
		Robert Gagne	2
		Victor Doherty	1
		Patrick Mailey	1
Defining behavioral objectives	18	Robert Mager	17
		T. A. Ryan	12
		Victor Doherty	1
System of occupational clustering	15	Gordon McCloskey	6
		William G. Loomis	5
		Dale Pinckney	5
		Anthony Maniscalco	2
		Joseph Arnold and W. J. Schill	1
Preparing teachers and programs to meet needs of disadvantages	10	T. A. Ryan	4
		Frank Riessman	3
		Barbara Kemp	3
Designing an organic curriculum	8	David Bushnell and Robert Morgan	8
Flexible scheduling and computer programming	8	Jack McLeod	8
Student follow-up	8	Patrick Mailey	7
		Group report**	1
Curriculum design, structure and planning	7	R. F. Mager and K. M. Beach, Jr.	7
Taxonomy of objectives	6	Benjamin Bloom	5
		David Krathwohl	1
Philosophy of education	6	Henry Ten Pas	6
Flow chart for curriculum patterning	6	Victor Doherty	6
Area center organization and operation	4	John Peterson**	1
		Joe W. Lemley**	1
		Participants**	2
Measurement and evaluation	4	John Krumboltz	3
		R. F. Mager	1

*Frequencies do not always equal number of participants reporting, since some participants listed more than one source.

**Institute participant.

Educational Practice	Number of Participants Reporting	Sources of Information	Frequency[*]
Current problems in vocational education	3	Jack Brookins Participants[**]	2 1
Organizational patterns of local programs	2	William Reynolds[**] Clifford Zenor[**]	1 1
Using task analysis, job description in curriculum planning	2	R. F. Mager	2
Using curriculum theory	2	J. B. MacDonald	2
Vocational course development	2	R. F. Mager	2
Interpreting affective, psychomotor, cognitive domains	1	Victor Doherty	1
Using a complete curriculum concept	1	Hilda Taba	1
Integrating vocational and general education	1	Gordon Quick	1
Identifying disadvantaged types	1	Frank Riessman	1
Home economics curriculum	1	May DuBois	1
Learning process in relation to curriculum	1	Robert Gagne	1
Using occupational information	1	Bruce McKinlay	1
Staffing	1	Anthony Cipriano[**]	1
Setting performance criteria	1	Jack McLeod	1
Attitudes to work	1	Henry Ten Pas	1
Role of vocational education in total education	1	John Peterson[**]	1
Using vocational education research in designing curriculum	1	T. A. Ryan	1
Use of public relations in vocational education	1	Gordon McCloskey	1

[*] Frequencies do not always equal number of participants reporting, since some participants listed more than one source.

[**] Institute participant.

APPENDIX N

Sources of Support Considered Essential for Implementation of Curriculum Development or Change

Sources of Support Considered Essential for Implementation of Curriculum Development or Change

Category of Support	Source of Support
State	Board of Education Superintendent, Assistant Superintendent of Instruction Director of Vocational Education Research Coordinating Unit staff Supervisors and directors
Local Schools	Board of Education Superintendent, Assistant Superintendent, Principal Director of Vocational Education Counselors Coordinators Teachers
Community College University	Community College Dean of Instruction University provost, department heads University faculty
Community	Business, trade, industry personnel Advisory Committee members Press

APPENDIX O

Reports of Post-Institute Participant Curriculum Development Activities

OREGON STATE UNIVERSITY
SCHOOL OF EDUCATION

CORVALLIS, OREGON 97331
EDUCATION HALL 317

SAMPLE REPORT OF PARTICIPANT POST INSTITUTE ACTIVITIES IMPLEMENTING CONCEPTS AND STRATEGIES OF THE INSTITUTE PROGRAMS

Name ______________________________

Title ______________________________

Affiliation ______________________________

Business Address ______________________________

City ______________ State ______________ Zip ______________

I. DISSEMINATION ACTIVITIES

A. Participant shared information relating to vocational education curriculum development with other institute participants.

Number of documents shared ______________

B. Participant shared information with teachers, administrators, others.

Number of individuals contacted ______________

C. Participant reported to professional groups to stimulate interest in the institute concept of vocational education curriculum development.

Number of reports presented to professional groups ______________

Number of individuals contacted through reports to professional groups ______________

D. Participant met with key persons in government, industry, education to stimulate and encourage adoption of institute model for curriculum development.

Number of individuals contacted ______________

II. TRAINING ACTIVITIES

A. Participant conducted program to train individuals outside his institute or agency in use of institute model of curriculum development.

Number of Programs conducted ______________

Number of individuals trained ______________

B. Participant conducted program to train individuals within his institution or agency in use of institute model of curriculum development.

Number of programs conducted ______________

Number of individuals trained ______________

III. CURRICULUM DEVELOPMENT

A. Participant supervised preparation of vocational education curricula implementing model defined in institute.

Number of curricula developed ________________________

B. Participant supervised utilization of vocational education curricula implementing institute model of curriculum development.

Number of programs conducted ________________________

Aaron Ahn
Teacher, Industrial Education
Wallace Rider Farrington High School
1546 North King Street
Honolulu, Hawaii 96817

I. Dissemination Activities -- None reported

II. Training Activities -- None reported

III. Curriculum Development -- None reported

James Albracht
Assistant Professor, College of Education
Kansas State University
Manhattan, Kansas
Manhattan, Kansas 66502

I. Dissemination Activities
  Joint meeting with participants held at AVA, Cleveland, December, 1967.
  Copies of Institute Curriculum Guide sent to:
    Kansas State Department of Education, 4 copies
    Kansas State University, College of Education, 5 copies
    Dr. J. D. McComas, Dean, College of Education, Kansas State University, 1 copy
    George Robinson, Director, Kansas Research Coordinating Unit, 1 copy
    Thirty beginning teachers of vocational agriculture (30 copies)
    Twenty experienced teachers of vocational agriculture (20 copies)

  Consulted with six educational administrators relative to curricular self study

II. Training Activities
  Conducted two workshops for experienced teachers of vocational education.
  Conducted one workshop for beginning teachers of vocational education.
  Taught the curriculum development unit for two classes--principles of secondary education

III. Curriculum Development Activities
  Twenty programs were prepared using institute model as a guide.
  Thirty programs were supervised using institute model as a guide.

Bill Allgood
Teacher-Coordinator of Work Experience Program
Abraham Lincoln High School
San Jose Unified School District
San Jose, California 95114

I. Dissemination Activities
   Information was shared with administrators in participants' school as well as those at the district level.
   Shared information with group of teachers in a graduate class at San Jose State College.
   Met with District Superintendent and Coordinator of Vocational Education

II. Training Activities -- None reported

III. Curriculum Development Activities
   Presently working with a County Boy's Institution developing a vocational program. Eight weeks in the summer will be spent at the institution.

Wade M. Anderson
Head, Industrial Arts Department
Gonzales Union High School
P. O. Box 218
Gonzales, California 93926

I. Dissemination Activities
   Information discussed with:
      John Wennergren, Vocational Director
      Richard Force, District Superintendent
      Lester Weigel, Principal
      Genew Parodi, Drafting Teacher
      Virginia Hayn, Business Machines Teacher
   Reported to California Industrial Education Association
   Reported to Local California Teachers Association

II. Training Activities -- None reported

III. Curriculum Development Activities
   Developed construction technology program.

Jack Ballard
President
Nash Technical Institute
Box 84, Benvenue Road
Rocky Mount, N. C. 27801

I. Dissemination Activities
   Joint meeting with participants, AVA Convention, Cleveland, 1967.
   I have thoroughly digested and shared the contents of the Guide with twelve faculty members in an "in-service" training program. The director of instruction of this institution has a copy of the Guide and has included many of the concepts in his cognitive map for vocational education. curriculum construction.
   Held meeting with United States Air Force,
   Held meeting with Air Patrol
   Held meeting with State Committee for Law Enforcement Training, N. C. Dept. Community Colleges-Occupational Education, Directors Association.

II. Training Activities -- None reported

III. Curriculum Development Activities
   Supervised development of Business Administration, Laboratory Technician, Cosmetology, Executive Secretarial, Archectitural Drafting and Design, Aerospace Education, Auto Mechanics, Automotive Body Repair
   Offered aerospace education curriculum in community college.
   Were this report given a year later, I could give an encouraging report here.

Henry Bauer
Director, Vocational and Occupational Education
Wenatchee Valley College
Fifth Street Campus
Wenatchee, Washington 98801

I. Dissemination Activities
   Distributed brochure on management training and office occupations.

II. Training Activities -- None reported

III. Curriculum Development Activities
   Developed air-conditioning curriculum
   Developed refrigeration curriculum

Orville H. Buesing
Teacher-Coordinator, Work Experience Education
2362 Venndale Avenue
San Jose, California 95124

I. Dissemination Activities
   All reports and information were distributed to vocational personnel and principals in the San Jose Unified District.

Participated in Bay Section of California Industrial Education Association.
Gave three presentations to graduate and undergraduate classes in Industrial Arts at San Jose State College.
Participated in workshop on curriculum development in Business Education; gave 3 presentations made over 10 week period.
Met with personnel in County Office and the three other school districts participating in the local Area Vocational Center.

II. Training Activities
Held curriculum development program in business education for San Francisco Bay Area persons through the California State Department of Business Education

III. Curriculum Development Activities
Developed a Vocational Mathematics program utilizing behavioral objectives
Developed a Technical Communications (blue print reading) curriculum.
Helped revise curricula at Regional Vocational Center which is composed of San Jose Unified School District and three other school districts.

Anthony V. Cipriano
Senior Supervisor in Education
State Department of Education, Division of Vocational Education
182 Tremont Street
Boston, Mass. 02111

I. Dissemination Activities
Discussed curriculum concepts with Superintendent of Schools, Director of Regional Technical Schools, Faculty Committee
Distributed copies of Guide for reactions; seven reaction reports received.
Met with Project Director of a Pilot Program having National implications -- Dec. 1967-April 1968.

II. Training Activities -- None reported

III. Curriculum Development Activities -- None reported

Virginia Clapp
Consultant, Vocational Education
Grossmont Union High School District
Box 1043 La Mesa, California 92030

I. Dissemination Activities

None as yet . . . I plan to send all participants a description of our 1967-68 curricular innovations and vocational education research in July when I hope to have completed reporting on them to the State of California.

Information was shared with all administrators concerned with curriculum (Instruction Division). It was also shared, via group meetings with business and industrial teachers and with some counselors interested in vocational guidance.

Reported to individuals and small groups of the California Industrial Education Association, California Vocational Education Directors, California Business Education Association

While I did not meet with such persons and groups solely for the above purpose, I did discuss whenever possible the desirability of using the basic concepts of the model in developing curricula. This includes such groups as the Industry Education Council, Title III (Elementary and Secondary Act) personnel, San Diego County Vocational Education Coordinating Council, San Diego Department of Employment personnel, California Department of Employment Research and Statistics Section Personnel, San Diego Personnel and Guidance Association

II. Training Activities

Acted as consultant for establishment of new office occupations program (model office), work experience education programs and planning of a proposed educational center for Compton Union High School District. This involved use of the institute model for curriculum development.

Inservice education with groups of business and industrial education teachers to encourage use of behavioral objectives and performance criteria in revision and innovations of vocational curricula.

Worked with the District Vocational Education Council to promote use of the Institute Curriculum Development concept.

III. Curriculum Development Activities

Courses and programs using model concepts: Warehousing: Shipping and Receiving, Cooperative Office Occupations Metals Technology, Nurses Aide, Business Offset Duplicating Clerk, Small Appliance Repair, Plastics-Synthetics, Auto body and fender, Service Station Management.

Supervised implementation of the above pilot projects.

Rather than conducting programs or making formal presentations, objectives have been accomplished largely by suggestion, guidance, encouragement, obtaining aid in funding, doing research to assist in evaluation, in general working as a team member with individuals and teacher groups wanting to improve or extend vocational education.

Much of my overloaded schedule this year has been concerned with development of a viable data processing evaluation system for this District and I have met by invitation with groups throughout the State to explain our plan.

William E. Daniels
Supervisor, Distributive and Adult Education
Moscow School District #281
410 South Third Street
Moscow, Idaho 83843

I. Dissemination Activities -- None reported

II. Training Activities -- None reported

III. Curriculum Development Activities -- None reported

Conard P. Edwards
Assistant Principal
Armstrong Adult Education Center
Public Schools of the District of Columbia
First and O Street N. W.
Washington, D. C. 20001

I. Dissemination Activities
  - Joint meeting with participants held at AVA, Cleveland, 1967.
  - Discussed curriculum concepts with Elliott Lucas, Principal, Armstrong Adult Education Center
  - Discussed curriculum concepts with Frank Lawrence, Assistant to the Assistant Superintendent, Vocational Education and Evening Schools
  - Discussed curriculum concepts with Dr. Cleveland Dennard, President, Washington Technical Institute,
  - Discussed curriculum concepts with Harold Clark, Assistant Superintendent, Vocational Ed., Adult Ed., Evening Schools
  - Discussed curriculum concepts with Frank Dischei, Office of International Activities (copy to Brazil), also with Mr. Theodore Patterson, Assistant Director, MDT Program, Washington, D. C. and Mrs. Miriam Fox, Counselor, MDT Program, Washington D. C.

II. Training Activities -- None reported

III. Curriculum Development Activities
- Rewriting curricula for post high school vocational programs in Washington, D. C.
- Guide used to help prepare curricula for newly created Washington Technical Institute

Alfred H. Flanigin
Teacher Coordinator Distributive Education
Sheridan School District #7
Sheridan, Wyoming 82891

I. Dissemination Activities -- None reported

II. Training Activities -- None reported

III. Curriculum Development Activities -- None reported

Herbert P. Halberg
Administrative Assistant
Honolulu Community College
874 Dillingham Blvd.
Honolulu, Hawaii 96817

I. Dissemination Activities
- Distributed material received at institute to key individuals in the state.
- Referred professional educators working on Hawaii master plan to institute director concerning curriculum development

II. Training Activities -- None reported

III. Curriculum Development Activities -- None reported

Henry B. Kalani
Hotel and Restaurant Division Chairman
Kapiolani Community College
620 Pensacola Street
Honolulu, Hawaii 96814

I. Dissemination Activities
- Discussed curriculum concepts with Student Council officers.
- Distributed 72 copies of Guide to staff members of Kapiolani Community College
- Discussed curriculum concepts with Dr. Sam Shigetomi, Director, Vocational-Technical Education, Community College System, State of Hawaii and Harriet Nakamoto, Dean of Instruction, Kapiolani Community College.

Executive Council of the Community College Faculty Club conducted seminar.

II. Training Activities

In-depth meetings with teachers in Hotel and Restaurant program.

III. Curriculum Development Activities

Master plan in occupational programs for State of Hawaii

James V. Lacy, Jr.
Vocational Consultant
O. C. C. I. Mid-Columbia Education Center
1312 Chenowith Rd.
The Dalles, Oregon 97058

I. Dissemination Activities

Discussed curriculum concepts with Vocational Education staff of Hood River County District; Maupin, Oregon School personnel; Vocational Education staff, Oregon State Department of Education; Counselors and teachers of The Dalles district and Sherman County High School; and Education Center Staff.

Met with Administrators, along with some board members, in two school districts.

II. Training Activities

This is being done with the Hood River vocational staff with a group at The Dalles Jr. High.

Worked with our own staff here at the Education Center to help them understand and utilize the principles involved, particularly as they apply to integration of the total education process.

III. Curriculum Development Activities

The Hood River staff is presently preparing curricula for occupational education in Wy'East and Hood River High Schools as well as a new school to be occupied in 1970. They are using the model as a guide.

Implementation of some parts of the work done above will take place this fall.

Joe W. Lemley
Principal
Tulsa Area Vocational Technical Center
3420 South Memorial Boulevard
Tulsa, Oklahoma 74145

I. Dissemination Activities

Distributed information on Basic Machinist Class is Second Course for Body Business (World News Tulsa)

Distributed curriculum bulletins for 1968-69 post-secondary program for two-year technology programs.

Joint meeting with participants held at AVA, Cleveland, December, 1967.

Guide for vocational education curriculum development (for administrative purposes only) provided for Dr. Hiram Alexander, Asst. Supt. for Instruction, Tulsa Public Schools; M. J. Ruley, Director of Vocational-Technical Education; Dr. Charles C. Mason, Supt. of Tulsa Public Schools; Dr. Bill Stevenson, Director -- RCU, Oklahoma State University

Reported to Chamber of Commerce, Tulsa; Kiwanis Club, Tulsa; Cosmopolitan Club, Tulsa; Hungry Club, Tulsa; Lions Club, Tulsa; Civitan Club, Tulsa; Engineers Club, Tulsa; Tulsa PTA Council, Tulsa.

Met with advisory groups for chemistry industry, advisory committee for machinists, advisory committees in 25 secondary vocational-technical education areas and 6 post-secondary technologies

II. Training Activities

Provided Marketing--Mid-Management information to the supervisor of Economics Education who used our model for the development of economics curriculum.

Conducted training for Machine Tool Committee, Chemical Committee, Design Technology Committee

III. Curriculum Development Activities

Distributed the model in block form to many areas in education.

Set up Machine Tool Curriculum and Precision Tooling and Riveting Curriculum for North American Rockwell Aviation.

Maynard Mathers
Trade and Industrial Coordinator
Waterford Township Schools
1415 Crescent Lake Road
Pontiac, Michigan 48054

I. Dissemination Activities

Joint meeting with participants, held at AVA, Cleveland, December, 1967

Distributed information through Waterford Township Industrial Education Program Bulletin; Waterford Township Co-op Coordinators Program; and Waterford Township INDICOM project.

Reported at University of Michigan Leadership Development Program
Met with Oakland County Director of Vocational Education, Director of Research Coordinating Unit, Oakland County Vocational Directors Association, Macomb-Oakland Coordinators Association

II. Training Activities -- None reported

III. Curriculum Development Activities
Developed team teaching for industrial education department, cooperating with Central Michigan University
Improved industrial course, Waterford Township High School
Developed media curriculum, Waterford Township High School

Robert Miller
Supervisor, Industrial Education
State of Alaska, Department of Education
Pouch F, Alaska Office Building
Juneau, Alaska 99801

I. Dissemination Activities
Joint meeting with other participants held at AVA, Cleveland, December, 1967

II. Training Activities -- None reported

III. Curriculum Development Activities
Model used in activating Alaska R. C. U. Gathering information on economics, cultural, social and educational factors. Five year educational plan. Setting up an organic and sensitive statewide system of curriculum planning.

Robert L. Nichols
Consultant Occupational Research
State Education Agency
Austin, Texas 78757

I. Dissemination Activities
Received material on numerical control from Clifford Zenor
Received counseling material from Angelo Tedesco
Sent copy of the guide to assistant commissioners of Texas Education agency

II. Training Activities -- None reported

III. Curriculum Development Activities
Mobile instructional units to prepare mentally retarded special education student for gainful employment.

Russell Paulsen
Coordinator, Continuing Education and Research
Marathon County Technical Institute
River Drive
Wausau, Wisconsin 54410

I. Dissemination Activities
  Distributed information about Operation Moonshop by Fred S. Cook and Daniel P. Brown
  Joint meeting at AVA, Cleveland, December, 1967.
  Incorporated ideas in Faculty-Night-Notes, a weekly newsletter.
  Participated in Research Seminar at Madison
  Reported at Professional Growth Week at Stout State University

II. Training Activities
  Conducted workshop at Marathon County Technical Institute for developing objectives
  Held three in-service training programs

III. Curriculum Development Activities
  Developed two-year Insurance Program and Evening School Course Outlines
  Set up MDTA Curriculum for 11 Projects and Adult Basic Education Programs - 5 cities, 14 teachers, 101 students

John L. Peterson
Assistant Principal
Phoenix Union High School, Area Vocational Center
512 E. Van Buren
Phoenix, Arizona 85004

I. Dissemination Activities
  Joint meeting at AVA, Cleveland, December, 1967

II. Training Activities -- None reported

III. Curriculum Development Activities
  Worked with staff of Phoenix High School counseling department and Area Vocational Center staff.
  Recommended a 3-hour vocational block for 29 instructional areas
  Recommended open enrollment vocational programs in 7 instructional areas for students with special needs, operating on 2-hour block, 2 semesters in auto upholstery; commercial art; diesel and truck mechanic; service station mechanic; electronic assembly; machine shop; clothing and design.

Bill G. Powers
State Supervisor, Technical Education
State Department of Vocational Technical Education
1515 West Sixth Avenue
Stillwater, Oklahoma 74074

I. Dissemination Activities
   - Distributed information about youths with jobs in the future (Stillwater, Okla news release), Ten Commandments of Human Relations, Philosophy of Educational Leadership (John A. Bartky), Peace of Mind (Joshua Loth Liebman), Strengthening Human Values in Our Schools (Iowa, 1955), Curriculum Programs in Action, Center for Technological Educ. S. F., Expectation of Oklahoma Firms Concerning Occupational Curriculum of State Junior Colleges.
   - Held Technical Education Curriculum Planning Workshop, National Technical Education Conferences, and Technical Administrators and Teachers in Oklahoma.
   - Abstract of Research Study on Generalized Framework: Youth Orientation to Employment: Concepts and Generalizations.
   - Character Development in Business classes
   - New approaches to Technical Education: Program at Oakland Community College
   - Reported to Five State Regional Curriculum Workshops and Oklahoma Technical Society
   - Met with Oklahoma State University Vocational and Technical Teacher Training Divisions, Representatives of Industry.

II. Training Activities
   - Discussed procedures with class of Vocational Technical Education Graduate Students--Oklahoma State University
   - Training of State Supervisors

III. Curriculum Development Activities
   - Worked with Oklahoma City School developing Electro Mechanical Technology Curriculum

William E. Reynolds
Director, Mid Valley Area Vocational Center
R. R. #2
Maple Park, Illinois 60151

I. Dissemination Activities
   - Shared courses of study in food service, health occupations, Occupational Talent Search (program for the disadvantaged) with seven members of the institute.

Joint meeting with participants held at AVA, Cleveland, December, 1967.

Eastern Illinois Development and Service Unit at Charleston, Illinois anticipates the use of the "Guide" for curriculum development in their In-Service Program. Dr. Gail Richardson, Director.

Reported to Illinois Associations of Superintendents, R. C. U. Vexed Conference, Illinois Vocational Guidance Coordinators, Vocational Administrators Conference.

II. Training Activities -- None reported

III. Curriculum Development Activities

Eighteen vocational offerings in Maple Park, Illinois.

Five curriculum areas in Decatur, Illinois

I will be spending the next year (1968-69) in an internship situation with the State Department of Vocational Education (Illinois) as Consultant for Curriculum and Teacher Education. In this position I intend to disseminate the Guide statewide and originate in-service training seminars at various teacher training institutions using the Guide as a base instrument in curriculum construction. I will be working under the auspices of the State Director of Vocational Education, State of Illinois.

Welcome Rumbaugh
Vocational Technical Supervisor
Lane County Intermediate Education District
748 Pearl Street
Eugene, Oregon 97401

I. Dissemination Activities

Distributed Vocational Technical Education: Its Present Status and Future Needs

Distributed "Your Career--Choice or Chance?"

Reported to Lane County; Superintendent's Advisory Committee on Vocational Education; Florence School Board; South Eugene High School Faculty; Junction City Schools; Fern Ridge Schools; Springfield Schools; Pleasant Hill Schools; Lane County Counselors; State Guidance Counselors Meeting; Bethel's Schools.

Meetings with 20-30 Club; Chamber of Commerce, Weyerhauser Co., IRECO, Inc.

II. Training Activities

Conducted workshop for Lane County Superintendent's Committee on Vocational Education

III. Curriculum Development Activities

Developed curriculum for Creswell Schools, McKenzie Schools, Florence Schools; Bethel Schools.

Thomas J. Straka
Director, Vocational Education
Kent Public Schools
District 415, King County
Kent, Washington 98031

I. Dissemination Activities

Letters in October to Nichols, Rumbaugh, Cipriano and Peterson regarding the application to Occupational Information. January and May met with and talked over programs with Henry Bauer.

Have shared the local plan for developing Organic Curriculum through Behavioral Objectives which I developed as the result of the institute with other curriculum areas of this school district, with the State Board for Vocational Education, and with Central Washington State College. All Industrial curriculum will be developed through this process and all review will be developed in this way.

Reported to Directors of Vocational Education, Washington State Conference, and Metro areas Industrial Arts Consultants.

Training leadership in the Boeing Co., Health Techna, Lockheed, Hydranamics, Todd Ship Yard, and Hitco.

Boeing training has stated all of their one hour training programs in terms of behavioral objectives. I have been working with Richard Evans and Alan Balco on these.

II. Training Activities

As to this date none, but will start a class in September through Central Washington College.

Conducted training for eleven shop teachers for curriculum revision in Industrial Arts and T and I; Junior High School Staff, Unit on Plastics; 12 Home Economics teachers; 9 Business and office teachers; and 6 T and I teachers.

III. Curriculum Development Activities

Developed Language Arts Curriculum, Curriculum for Communications, Drafting and Welding, and at Central Washington State College for teachers in all areas.

All 8th and 9th grade I. A. in the Kent Schools for 1968-69 school year. All high school drafting, welding, commercial foods, and commercial sewing programs.

Angelo J. Tedesco
Associate Consultant, Program Development
State Department of Education
Box 2219
Hartford, Conn. 06115

I. Dissemination Activities
   Distributed Graduate Follow-Up 1966, Connecticut State Department of Education, Division of Vocational Education; and Evaluation is Important Part of Teaching-Learning Process by James M. Burke.
   Discussed curriculum concepts with Directors of Vocational Technical Schools in Conn.; and with chairmen of 35 curriculum committees.
   Met with staff in Bureau of Vocational Technical Schools in Conn.

II. Training Activities
   Conducted In-Service Teacher Training Program, Central Connecticut State College
   Have developed a guide for Lithography Trade and working on guides inCarp. and Machine trade areas.

III. Curriculum Development Activities
   Developed Curriculum in Food Handling and Distribution and Curriculum in Health Services Study
   Set up Graduate program at Central Connecticut State. Covers Curriculum Construction in Vocational and Technical Education. Individuals taking course are involved in Trade and Industrial, Industrial Arts, Business Education, Technical College, Distributive Education, Home Economics, Health Services, Local High School Vocational Coordinators.

Harvey G. Thiel
Area Administrator
State Division of Vocational-Technical and Adult Education
P. O. Box 390
Las Vegas, Nevada 89101

I. Dissemination Activities
   Joint meeting, AVA, Cleveland, December, 1967.
   Distributed information in Institute Guide to thirty individuals in Nevada Educational System.

II. Training Activities
   Held training for Staff Center, Vocational Rehabilitation, Employment, Security, Health; and Division of Vocational-Technical and Adult Education.

III. Curriculum Development Activities

Developed Culinary Arts curriculum at Nevada Youth Training Center, Elko, Nevada.

Nevada is in the process of State Department reorganization and long range planning. It is hoped and a recommendation will be made to adopt the Curriculum Development Guide by the State of Nevada as an official document.

Billy J. Vice

I. Dissemination Activities

Information relating to vocational education curriculum development was shared with others through the use of the "Guide for Vocational Education Curriculum Development" (approximately 240 persons to this time--during the months of August, September, October and November)

Shared the first edition of the guide and related information with all members in the Instructional Materials Laboratory for Vocational Education in Kentucky (six service areas represented--agriculture, business-office education, distributive education, health occupations education, vocational home economics education and trades and industries education)--August 8, 1968 until all of these persons had a chance to read the guide.

Made the guide available and informed all persons in Vocational Education at the University of Kentucky (31 persons). Placed a copy of the guide in the library of the division--October, 1967.

Shared the guide (and a report) with interested persons in the Kentucky Research Coordinating Unit for Vocational Education and certain persons in the Bureau of Vocational Education, Kentucky State Department of Education--August and September, 1967.

Shared information (guide and ideas) with certain teachers and groups of teachers of agriculture in Kentucky (about 200 teachers)--mainly during the months of October and November of 1967 in a formal setting, but model used at other times.

Five or more professional groups received certain ideas relating to the institute concept of vocational education curriculum development during August, October, November of 1967, and March of 1968.

Personnel of the Instructional Materials Laboratory and the Research Coordinating unit (August, 1967)--about 9 persons

Teachers of agriculture (3 meetings during October 27, November 10 and November 24--approximately 200 persons)

Teacher trainers (staff from Universities, State Department--administrators, supervisors and coordinators) in agricultural education (March 26, 1968)--17 persons

Informal group (two small groups--7 or more persons)

Meeting with Key Persons (4 or more persons)

Director of the Instructional Materials Laboratory (individually, with other persons in laboratory, and in formal groups--first in August)

Director of the Kentucky Research Coordinating Unit for Vocational Unit--August, 1967)

Present Director of Vocational Education in Kentucky--August, 1967

Preservice teacher educators--October and December of 1967 and February, 1968

II. Training Activities

Workshops were held with teachers during the fall of 1967.

The participant, meeting with approximately 200 teachers, encouraged teacher participation in curriculum planning, evaluation and revision as suggested in the model, especially in evaluation and offering suggestions to revise the curriculum continuously as new information is gotten. Instruction was given in how to use available units to help prepare courses, and ideas important for implementing our model were discussed.

Student teachers in agricultural education (preservice program) received formal instruction on curriculum development (October and March)--about two and one-half hours during 1967-68 at the Universities offering programs of professional preparation in teaching.

III. Curriculum Development Activities

Presently, a one year program "Exploring Agricultural Careers" is being developed for use with freshmen of approximately 18 schools on a pilot basis in Kentucky for next year (1968-69 school year). Teacher trainers, administrators of vocational education, teachers and other key persons are helping provide the information base. Behavioral objectives considered desirable have been identified, and the pilot program will be evaluated so the curriculum can be revised and adopted by other teachers in other schools if results are satisfactory.

Several units (modules of a curricula) have been developed by the participant during the year, using the model defined in the institute.

Met with the professional staff (teacher educators in agricultural education) of agricultural educators from the Universities and the State Department to discuss the evaluation of the present curriculum in agricultural education, the philosophical and information dimensions of curriculum development (reported and analyzed research available and encouraged group to suggest other research needed as a basis for curriculum planning), improvements needed in the curriculum and suggestions (using the institute model of curriculum development) for ways to implement and carry out the important function (about 19 persons)--March 26, 1968.

Presently, a committee (including myself) is evaluating instruments and methods to collect other information that the group feels is needed to provide information, so the present curriculum can be studied so that articulation, objectives, and other curriculum components will be revised (hope to evaluate the "total" curriculum--from the time students enter the program through adult level). All teachers in agriculture in Kentucky will receive the instruments, instructional manual and other work sheets needed in identifying population, sample and individuals required in collecting information--about 280 teachers).

Dewain Washburn
Director
Sevier Valley Tech
515 West First North
Richfield, Utah

I. Dissemination Activities
   - Shared information with staff members at Sevier Valley Tech.
   - Shared information with staff at Utah Technical College at Salt Lake City and with the staff at Utah Technical College at Provo
   - Reported to State Specialists, Superintendents, Vocational Directors and Principals.

II. Training Activities
   - Conducted workshop in setting up behavioral objectives.
   - Held seminars at Sevier School District.

III. Curriculum Development Activities
   - Eighteen vocational instructors were directed in writing curricula guides implementing the model defined in the institute.

Set up curricula in Automotive Mechanics, Business Education, Career Planning, Electronics, Vocational Carpentry, Vocational Drafting.

Clifford Zenor
Supervisor of Curriculum
State Board of Vocational Technical and Adult Education
State Office Bldg. Rm. 720
Madison, Wisconsin 53702

I. Dissemination Activities
  - Film Strips (Vincent Associates, P. O. Box 24714, Los Angeles) Systematic Instructional Decision-Making; Establishing Performance Standards; and Evaluation.
  - Selecting Appropriate Educational Objectives.
  - Discussed curriculum concepts with teachers and supervisors of vocational education.
  - Reported to Professional Growth Week, Stout State Univ.

II. Training Activities
  - Presented guide concepts to instruction services supervisors from area districts during professional growth in-service week.

III. Curriculum Development Activities
  - Work with Russell Paulsen in developing new curricula and re-developing other programs.
  - Assist in setting up curricula in local schools.

APPENDIX P

Participant Reactions to Concepts Developed During the Institute

Participant Reactions to Concepts Developed During the Institute

Concept	Mean Rating*
curriculum hypothesis	2.60
research model of curriculum development	2.36
systems analysis	2.26
work experience	2.25
behavioral objectives	2.16
organic curriculum performance criteria	2.16
target population	2.06
broad based curriculum	2.05
skill surveys	2.00
curriculum assumptions	2.00
job description	2.00
instructional unit	2.00
philosophy	2.00
interdisciplinary curriculum	1.96
employment data	1.96
lesson plan	1.93
prerequisite	1.86
media	1.86
flexible scheduling	1.86
affective outcomes	1.83
evaluation	1.83
psychomotor outcomes	1.80
role playing	1.80
home economics curriculum	1.76
cluster curriculum	1.76
common job elements	1.76

*Combined rating computed by summing ratings of thirty participants. Rating was on 7 point scale, ranging from -3 (unpleasant, worthless) to +3 (pleasant, valuable).

Concept	Mean Rating
knowledge cluster	1.70
Benson Polytechnic	1.70
cognitive outcomes	1.66
task analysis	1.66
measurement	1.63
computer scheduling	1.63
proejct FEAST	1.13
pretechnology program	1.03
job corps	.70

*Combined rating computed by summing ratings of thirty participants. Rating was on 7 point scale, ranging from -3 (unpleasant, worthless) to +3 (pleasant, valuable).

Extent of Participant Agreement with Basic Assumptions Presented through Readings and Resource Personnel during the Institute

Assumption	Strongly Disagree	Disagree	Agree	Strongly Agree
	Extent of Agreement			
General and vocational education are inseparable.	0	1	11	18
Distinguishing between vocational education and general education leads to confusion rather than clarity.	3	5	14	8
The organic curriculum is adaptive and self-improving.	1	6	14	9
Using systems approach to plan curriculum increases the chance for getting a logically planned curriculum.	0	0	15	15
There is a great need for overhauling the American high school.	0	2	8	20
The vocational educator should be concerned about values and attitudes of learners.	0	0	5	25
Achievement of learners should be determined on the basis of performance criteria.	0	0	10	20
Curriculum development should systematically consider needs of learners and needs of society.	0	0	10	20
The educational curriculum consists of the total educational environment.	1	0	7	22
The teacher is an integral part of the curriculum.	0	0	5	25
Objectives serve to guide and direct the curriculum development process.	0	0	6	24
Task sequencing can be used to facilitate learning.	0	0	16	14
There are many obstacles which serve to impede learning under usual conditions for economically deprived children and youth.	0	0	16	14
Role playing appears to be uniquely suited for an instructional method to use with the poor.	0	2	17	11
Many different instructional approaches can be used effectively in teaching the poor.	0	1	11	18
Learning outcomes may be conceptualized as falling into three categories, cognitive, affective, and psychomotor.	0	0	16	14
Media capabilities are defined in terms of physical characteristics.	0	8	14	8
Methods are defined in terms of potential educational value.	0	2	17	11

Assumption	Extent of Agreement Strongly Disagree	 Disagree	 Agree	 Strongly Agree
Data from analysis of common elements among jobs can be used in developing curriculum.	0	0	17	13
Employers can provide information which can be used in developing vocational education curriculum.	0	0	13	17
New instructional techniques must be considered in developing vocational education curricula.	0	0	15	15

APPENDIX Q

Participant Rating of Resource Persons on Content Mastery and Communication Skill

Participant Rating of Resource Materials Used in Institute

Participant Evaluation of Pre-institute Planning and Program Operation

Q-1

Participant Rating of Resource Persons on Content Mastery and Communication Skill

	Participant Rating	
Resource Person*	Content Mastery Mean	Communication Skill Mean
A	4.63	4.83
B	3.83	3.73
C	3.80	3.93
D	3.70	3.43
E	3.53	2.26
F	3.50	3.70
G	3.43	3.43
H	3.33	3.73
I	3.33	3.23
J	3.20	2.63
K	3.06	3.00
L	3.03	2.23
M	2.53	2.20
N	2.23	2.10
O	2.20	2.00

*Listed by code letter in descending order of content mastery rating.

Participant Rating of Resource Materials Used in Institute

Resource Material**	Participant Rating* Mean
A	2.70
B	2.53
C	2.40
D	2.23
E	1.93
F	1.83
G	1.80
H	1.80
I	1.73
J	1.72
K	1.16

*Rating of 1.50 would be considered of average value.

**Listed by code letter in descending order of rating.

Participant Evaluation of Pre-institute Planning and Program Operation

	Activity	Participant Rating				
		Strongly Disagree	Disagree	Agree	Strongly Agree	No Response
123.	Pre institute information was sufficient.	1	1	25	3	0
124.	Pre institute information accurately described program.	1	1	24	4	0
125.	Information about the program during the institute was adequate.	0	3	24	3	0
126.	Allowance for travel was adequate.	1	3	22	4	0
127.	Living accommodations were satisfactory.	0	1	20	8	1
128.	Meals were satisfactory.	0	0	20	8	2
129.	Qualifications of resident institute staff, excluding guest lectures, were satisfactory.	0	1	18	8	3
130.	Competencies of support staff (secretarial-clerical) were adequate to implement a quality institute program.	0	0	14	16	0
131.	The general organization of the institute program, including planned formal and informal activities, was satisfactory.	0	2	20	8	0
132.	The balance between formal activities (lectures, guest speakers, field trips, readings, task force meetings) and informal activities (bull sessions, breaks, social hours) was satisfactory.	0	3	18	9	0
133.	The time allocated for talking individually with project director and/or professional staff members was sufficient.	1	8	19	2	0
134.	The sessions followed a logical pattern.	0	1	22	7	0
135.	There was sufficient time for informal discussion.	1	3	23	3	0
136.	There was sufficient opportunity for each participant to express his/her ideas and views.	1	3	23	3	0
137.	Program organization made it easy to work efficiently to achieve the objectives.	1	3	23	3	0
138.	It was possible to work together as a group effectively.	1	1	22	6	0

Activity	Strongly Disagree	Disagree	Agree	Strongly Agree	No Response
	Participant Rating				
139. New acquaintances were made which will be helpful in future vocational education undertakings.	0	0	8	22	0
140. Institutes of this type should be offered in the future.	0	0	11	19	0
141. Programs of this type will contribute significantly to vocational education.	0	0	12	17	1
142. Plans for follow-through are satisfactory.	0	0	16	14	0
143. The "hand-out" materials distributed to the members doing the institute were worthwhile.	0	1	25	4	0
144. The time schedule of the institute (9:00 a. m. - 12:00 noon and 1:00 p. m. to 4:00 p. m.) was satisfactory.	0	5*	16	9	0

*Suggestions for 8:00 a. m. to 3:00 p. m. or 8:30 a. m. to 4:30 p. m.

(REV. 9-66)

DEPARTMENT OF HEALTH EDUCATION AND WELFARE
OFFICE OF EDUCATION

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ITLE
Summer Institute to Prepare Vocational Educators in Curriculum Development

PERSONAL AUTHOR(S)
T. A. Ryan

INSTITUTION (SOURCE)
Oregon State University

SOURCE CODE

REPORT/SERIES NO.

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University of Hawaii

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RETRIEVAL TERMS
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IDENTIFIERS

ABSTRACT

A four-week institute to prepare vocational educators in leadership positions for effective implementation of change agent role in vocational education curriculum development was held on Oregon State University campus from June 19 to July 14, 1967. Thirty participants were selected from 130 applicants. Objectives implementting major purpose were (1) develop greater understanding of curriculum theory and design; (2) increase familiarity with innovative programs and practices; and (3) develop proficiency in using techniques and strategies of a decision-model of curriculum development.

Program included formal and informal activities, including presentations by resident faculty of Oregon State University Division of Vocational Education, Adult Education and Community Colleges, visiting lecturers, assigned readings, field trips, reaction groups, question and answer sessions, discussion groups. A task force project eventuated in developing a guide to vocational education curriculum development. The State Director of Vocational Education and his professional staff participated in program planning, staffing, and operation.

Evaluation made immediately following the institute and follow-up during post-institute period indicate objectives were achieved.